THE AMERICAN NEPTUNE

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IN *the summer of 1940, when plans for the publication of this journal were maturing, there were days when it seemed foolhardy to consider the launching of such a peaceable venture. Yet* THE AMERICAN NEPTUNE *was launched in a world at war, has with this issue completed its first year's voyage, and is looking forward hopefully to its second. The Editors, who have so repeatedly stated that the contents of the journal ultimately depend upon the interests and support of its readers, have more than once been surprised and edified by contributions as novel as they were unexpected. The existence of an Arizona fleet was unsuspected by the Editors, yet accounts of that, of wooden sails, and of other unanticipated aspects of American maritime history have been contributed by readers. It is a matter of deep regret, however, that articles dealing with the historical development of various phases of shipbuilding and of nautical equipment and instruments have not been submitted for publication. It is not surprising, for such articles are the most difficult to prepare, and, unless based upon long knowledge of the subject and fully documented, are worse than useless. Liberally illustrated articles dealing with the history of various details of rigging, of anchors, steering wheels, ordnance and similar subjects, would be not only of general interest at the time of their publication, but of permanent reference value to builders of accurate ship models. The Editors hope that articles of this type may be submitted during the coming year.*

Sir Geoffrey Callender, reviewing the first number of THE AMERICAN NEPTUNE *in the July issue of* THE MARINER'S MIRROR, *writes in part: 'If the accumulated experience of* THE MARINER'S MIRROR *during the past thirty years*

may be cited, the absent spur of financial inducement should prove no serious handicap. Keenness makes an excellent substitute; and keenness is characteristic of those whom Elizabethan landlubbers dubbed "the idolaters of Neptune." All members of the Society of Nautical Research will desire to be included in a cordial message of good luck and bon voyage to the transatlantic MARINER'S MIRROR, *and will desire* THE AMERICAN NEPTUNE *throngs of enthusiastic idolaters.'*

Truly his idolaters have been faithful to the divinity who looks down benevolently upon these pages, for, despite wartime conditions, subscriptions have come in from most of the ports that American ships have visited, as well as from the ports where they were built, and from places hundreds of miles from the sea. This generous support has allowed the Editors to use more illustrations than they had originally anticipated, and to include an additional thirty-two pages of text in the July issue. The maintenance of the present standard of illustrations will require an equally generous renewal of subscriptions for the coming year. It will therefore be greatly appreciated if the renewal subscription form, which is enclosed in this issue, be signed and returned promptly, so as to insure the printing of an adequate supply of the January issue. As the journal has no paid staff, it is impossible to send the frequent reminders by which many magazines published for profit jog the memories of well disposed but dilatory subscribers. Payment may be made either when the subscription form is returned, or upon the appearance of the January issue.

An index to the contents of the first volume appears at the end of this issue, together with a general title-page and table of contents for the volume. A standard blue buckram binding, sufficiently durable for library use, has been designed, and subscribers wishing to have this may send their copies to Mr. John W. Marchi's bindery at Portland. Mr. Marchi has also prepared a cloth covered slip case, which will hold unbound current numbers of the NEPTUNE *upright on a library shelf, and which may be used year after year.*

The Star of Scotland, *ex*-Kenilworth

BY JOHN LYMAN

THE four-masted bark *Kenilworth* was built of steel at Glasgow, Scotland, by John Reid & Co. in 1887. Her owners, Williamson, Milligan & Co. of Liverpool, had commenced ship-owning in 1864 with five iron ships, the largest being 1,199 tons. They added the *Ivanhoe* of 1,383 tons in 1868 and three splendid iron ships during the 1870's, the *Roderick Dhu*, *Lammermoor*, and *Cedric the Saxon*. All their vessels, it will be observed, bore names from the novels of Scott; they carried the Scott theme into the decorations, and called themselves the 'Waverly Line.'

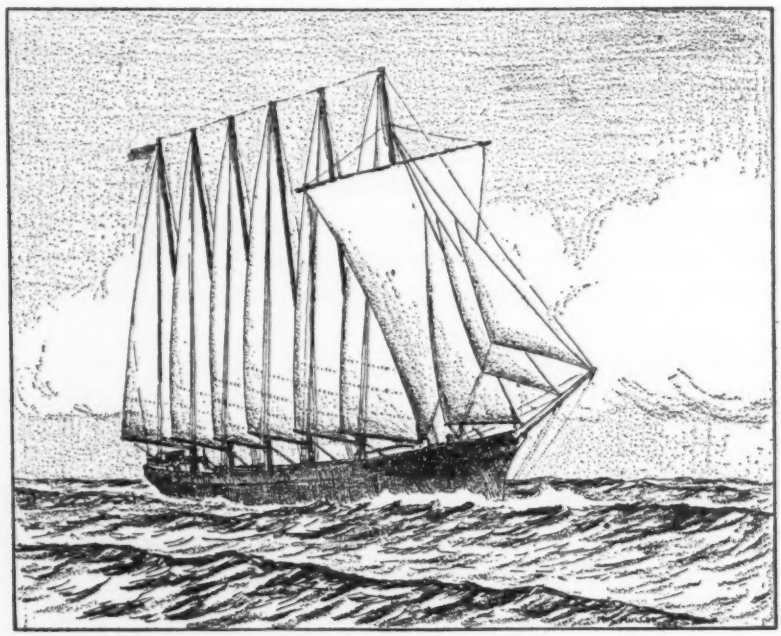
In 1887 Williamson & Milligan decided upon the first addition to their fleet in twelve years. Following the trend of the times toward larger vessels, they placed an order with Reid for the finest 2,300-ton ship he could build. The *Kenilworth* as a result cost more than any ship of her tonnage built on the Clyde in her time; but there could be no better proof of the high character of Reid's workmanship than the fact that her hull is afloat and in service today. The figure of her cost has not been preserved, but it was probably not far from $240,000.[1] On dimensions of 300.2 by 43.1 by 24.2 feet, with a 47-foot fo'c'sle and poop about the same length, she registered 2,308 tons, gross. She had two laid decks, the upper steel under the wood sheathing; and the solid turned knees of her deck beams, instead of the separately riveted plate knees that would now be used in similar construction, are one of the features that impress present-day shipbuilders with the quality of her building. She was rigged, like most contemporary British vessels of her tonnage, as a four-masted bark,[2] having

[1] B. Lubbock, *Last of the Windjammers* (Glasgow, 1929), I, 314, gives the cost of the *British Isles*, 2,394 tons, built by Reid in 1884, also with *carte blanche*, as £21 per ton.

[2] The sail plan of the *Kenilworth*, reproduced through the kindness of Mr. C. R. Sawyer, is a tracing by the late G. B. Douglas of the original sail plan which was carried aboard ship by Captain Baker. There is no hull plan of comparable authenticity available. The lines of the bark *Sindia*, published by Basil Lubbock, *The Last of the Windjammers* (Boston, 1929), II, i, opposite p. 106, slightly shortened amidships would be a satisfactory substitute for model builders who wish to build the *Kenilworth*.

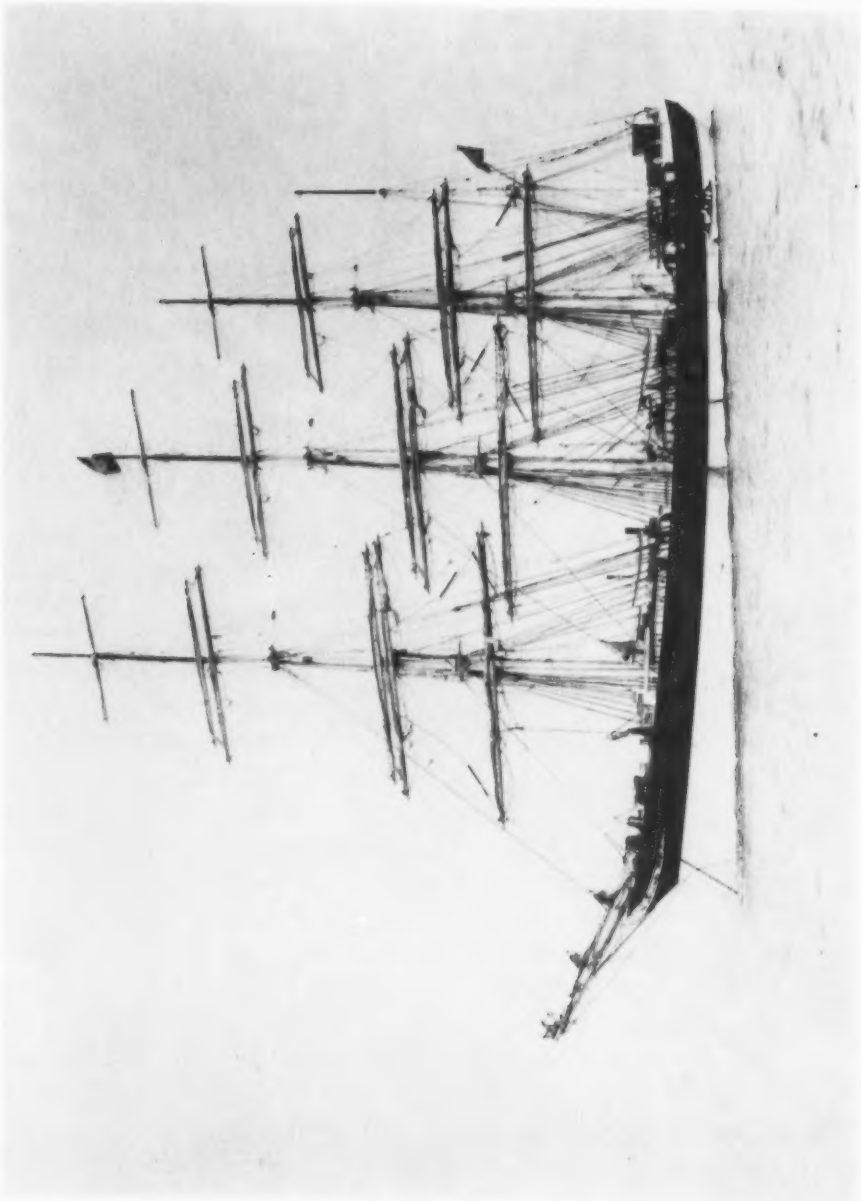
double topgallant-yards and royals, lowers and topmasts in one piece, a pole jigger, and the inevitable spike bowsprit.

Captain F. McNair left *Cedric the Saxon* to take the *Kenilworth* from the stocks, and after a fair maiden passage to San Francisco, made the run to Newcastle, Australia, in the excellent time of forty-one days. The *Kenilworth* later in 1888 took wheat from San Francisco to Cork in one hundred and five days, another very good performance, and then returned to San Francisco to load wheat again. Early on the morning of 25 August 1889



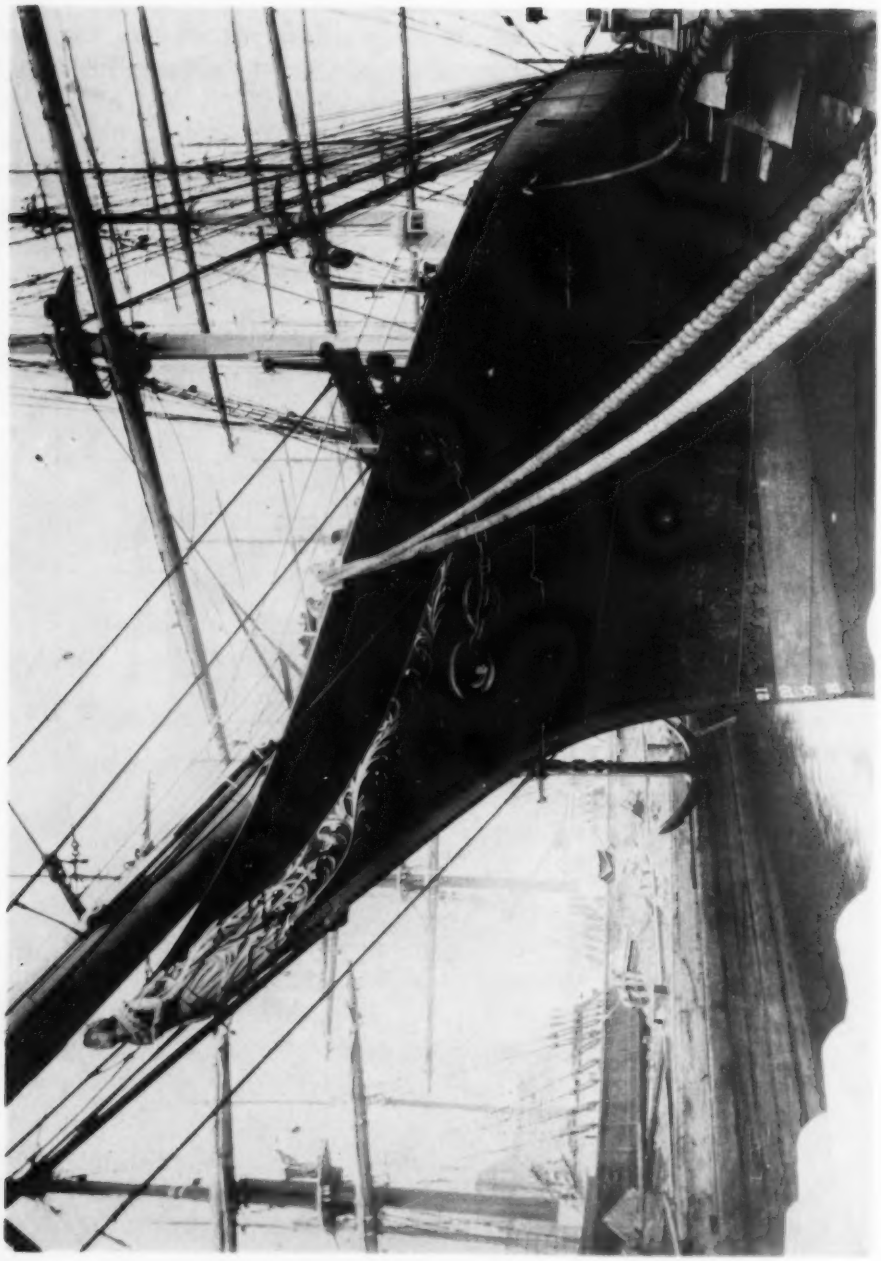
The 1941 rig of the *Star of Scotland:* sketch by Jerry MacMullen

she was lying at McNear's wharf at Port Costa alongside the *Armenia* of the Houghton fleet and the New Brunswick bark *Honouwar*. Fire broke out in the warehouse, and before the sleepy crews could be roused to cast off their lines the rigging of the three ships was a mass of flames. The two wooden vessels drifted out into the stream and burned to the water's edge, the crews jumping over the side and swimming to land or being picked up by shore boats. The *Kenilworth*, with her steel upper deck, masts, and standing rigging, had considerably less for the fire to work on, and the Mare Island fire boat managed to beach her, full of water, but with little serious damage. The Waverly Line, however, abandoned her to the under-



Bark *Kenilworth*

Reproduced from a photograph owned by Edward Strong Clark



Bark *Kenilworth*

Reproduced from a photograph in the Peabody Museum of Salem taken by Thomas A. E. Luke between 1895 and 1900

writers as a constructive total loss, and she was sold to Arthur Sewall & Co. of Bath, Maine, through their New York agents, Dearborn & Co.

Arthur Sewall at this time was just commencing construction of the first of four 3,000-ton wooden vessels, which except for McKay's *Great Republic* were the largest wooden square-riggers ever built, and which were widely hailed as the American solution to the competition of foreign steel vessels. In the *Kenilworth*, purchased at a bargain price, he had both a hedge and a floating laboratory, an opportunity to compare running costs and upkeep of a steel vessel operated alongside the wooden ships of his fleet. The *Kenilworth* was floated, and refitted under her old name at the Union Iron Works of San Francisco, then the only yard on the Pacific Coast handling large steel vessels. Fully repaired she cost the Sewalls $45,000; but the repairs alone did not come to the required three-quarters of this total, and her owners had to seek a special Act of Congress, passed 4 February 1890, to obtain U. S. registry for her.

As the first American steel sailing vessel, the *Kenilworth* registered 2,293 tons, gross; her net being at first the nominal 95% of this figure or 2,178 tons and later being reduced to 2,146. A bath tub in her fo'c'sle was an innovation which attracted some attention; otherwise there was little improvement to be made over her original construction. Under the command of Captain James G. Baker she left San Francisco 19 April 1890 and made the passage to Liverpool with a full cargo of wheat in one hundred and one days. Captain Baker commanded the *Kenilworth* for the next eight years, during which time she never made a poor passage, her best runs being from Honolulu to Philadelphia in ninety-one days and from Hongkong to New York in ninety-two.

Comparing the costs and earnings of the *Kenilworth* with their wooden giants, Arthur Sewall and his nephews came, perhaps reluctantly, to the conclusion that any new sailing vessels added to their fleet in the future would have to be of steel construction. They accordingly had a Liverpool naval architect draw up a set of plans, ordered a cargo of British steel, converted the family shipyard to handle the new material, and the four-masted bark *Dirigo*, the first steel sailing vessel built in North America, went down their ways at Bath in 1894. Before they gave up shipbuilding in 1903, the Sewalls completed an oil barge, a five-masted schooner, a bark, and seven more four-masted barks. Because they leaned toward cargo capacity rather than sailing ability, the *Kenilworth* was more than a match for any of them, and she remained until her sale in 1908 the fastest of the Sewall steel ships.

On 29 May 1898 the *Kenilworth* left Hilo for New York with a cargo of

raw sugar and a semi-mutinous crew, who had been suspected of setting a minor fire that had been discovered while still in port. On 8 July, when the ship was in 46° 14′ S, 116° 25′ W, smoke rising from the hatches told that the cargo was again on fire. What was at first believed to be a successful attempt to smother it was made by sealing all openings to the hold, but at 11:45 that night, Captain Baker, the mate, and a cabin boy were found suffocated in their bunks from the fumes. The second mate, Victor Generaux, assumed command and changed the course for Valparaiso, where she arrived still smoldering sixteen days later. Here the cargo was unloaded to get at the trouble, and Captain Jim Murphy, who had just retired from the *Shenandoah*, was sent down from New York to take charge of things. He got the cargo restowed in short order and drove the *Kenilworth* around the Horn to New York in the near-record time of sixty-six days, then handing her over to Captain William Taylor.

Taylor's best work with the ship was a run from New York to San Francisco in one hundred and three days, and an eastbound transatlantic crossing in seventeen days, eight hours. He relinquished command at Philadelphia in 1903 in favor of Captain H. A. St. Clair, who turned over to Captain Lewis S. Colley after a creditable one hundred-day passage from Honolulu to the Delaware Breakwater. Colley had the bad luck to take two hundred and thirty days getting from New York to Manila, the first bad passage the ship had ever made. Captain J. A. Amesbury took command in 1906; leaving Philadelphia in August for San Francisco, he spent fifty-five days bucking the Horn, and finally put back to Montevideo with steering gear and rigging damage. Repairs consumed fifty-two days, while the weeds grew on the *Kenilworth's* bottom, and after her second attempt to beat Cape Stiff, she turned up five months later at Rio de Janeiro with a leak in her bows. Down from New York came Captain Joseph E. Sewall, who had just retired from command of the *William P. Frye*; but he was determined to make his retirement from the sea stick. He docked the *Kenilworth*, cemented the offending plates, got most of the cargo back into her, and then handed her over for the run to San Francisco to Captain Taylor.

Arriving at San Francisco in March 1908, the ship first went to the Union Iron Works for a new deck, and was then laid up at Sausalito, Captain Omar E. Chapman relieving Captain Taylor. On 25 November 1908 she was bought by the Alaska Packers Association of San Francisco, through Bates & Cheseborough, for $62,000, and three days later was towed to her new owners' shipyard at Alameda, where the work of refitting her for her new occupation as a salmon-packer was begun.

The Alaska Packers Association was incorporated 9 February 1893, an outgrowth of various marketing and operating agreements which had attempted to regulate competition in the mushrooming salmon-canning industry of Alaska. By acquiring outright the assets of companies then operating all but eight of the thirty-seven Alaskan canneries, and closing down the less profitable units until the world market could catch up with production, the new association in a few years was on a sound footing and accounted for some two-fifths of the canned salmon output of the world. Since all the labor and supplies of the Western Alaska canneries have to be brought from San Francisco, Portland or Seattle in the brief interval between the breaking-up of the ice in the river mouths around Bristol Bay and the commencement of the salmon run, no regularly scheduled freight service can handle such a peak load. From the first, therefore, the canneries have had to operate their own vessels. The early packers chartered ships by the season; but it soon became evident that they had to become at least partly independent of the charter market by owning vessels outright, even at the cost of maintaining them idle through the winter. The Alaska Packers Association thus found among the assets of the companies it absorbed five wooden sailing vessels. In the next seven years it added ten more, its fleet in 1900 consisting of seven ships, two schooners, and four barks, as well as several small wooden steamers which served as tenders along the Alaskan coast.

In 1900 the Association changed its policy, and thereafter bought only iron or steel vessels. Although the company could, and did, carry its own insurance on hulls and coal or lumber cargoes, sound business demanded that the insurance on its stock-in-trade — canned salmon and the materials for producing it — be placed in the regular market at the going rates. The difference in these rates between A-1 metal vessels and the second grade wooden ships it was then using, applied to an annual pack of several million dollars, would pay the extra cost of the metal vessels long before their useful sea life was finished. The annexation of Hawaii had brought a dozen or so suitable iron or steel sailing vessels under U. S. registry, and several more had qualified as repaired wrecks; by 1908 the Association had bought nine of these vessels, while the *Kenilworth* made the tenth and largest. No less than four of the iron ships were 'Irish Stars,' built for J. P. Corry & Sons of Belfast and bearing the respective names, *Star of Bengal, Star of France, Star of Italy*, and *Star of Russia*. In 1906 the Alaska Packers had decided to rename all the iron and steel ships in harmony with the Irish quartet, and for *Kenilworth* the new name *Star of Scotland* was chosen.

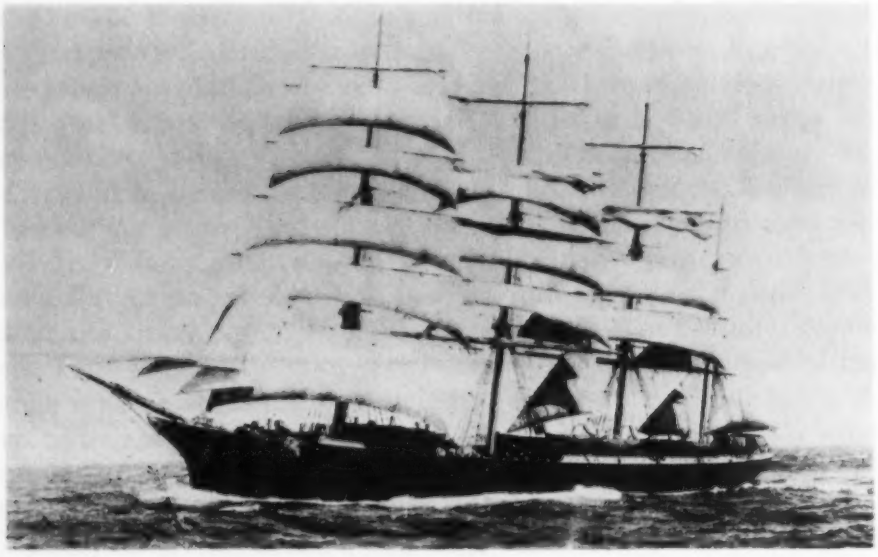
Under the command of Captain P. C. Rasmussen, the *Star of Scotland* had for her first two years the duty of making a voyage to Vancouver Island at the end of January to pick up a cargo of coal, which on her return to San Francisco was divided among the vessels of the fleet. The ships then loaded their tin-plate, box-shooks, lumber, machinery, food and supplies, and gill-net boats; signed on their crews of fishermen and gangs of cannery workers; and put to sea one or two a day at intervals during March and April. The earliest date of leaving San Francisco of the *Star of Scotland* in her eighteen years in the trade was 31 March 1917, and the latest 29 April 1923 and 29 April 1924. The fishermen were drawn from two classes, the Anglo-Saxon and Scandinavian seamen of the coast, and the Italian and Greek fishermen of the San Francisco and Monterey market fleets. They used double-ended sail and rowing boats of a type which, although it originated on the Sacramento, is known as a 'Columbia River boat.' The companies supplied the boats, which incidentally are still used in Bristol Bay, where a wise government has prohibited use of power boats in the salmon fishery.

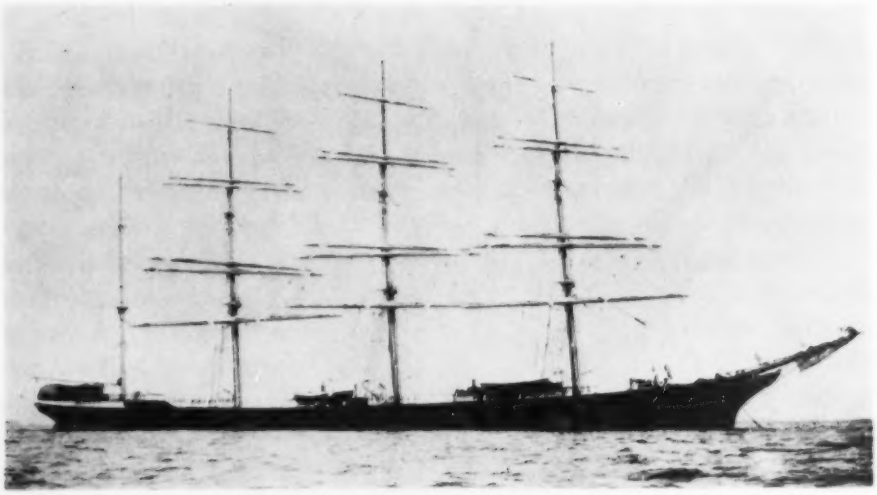
The cannery hands, of which each ship carried perhaps one hundred and fifty, were in the early days of the industry almost exclusively Chinese, and for many years they did the semi-skilled labor of butchering the fish. About 1908, however, a clever mechanic of Seattle invented a machine to do the work, and Smith's 'Iron Chink' soon became standard equipment in the canneries. In 1910 the largest racial group among the cannery workers was Japanese, while since that year Mexicans have predominated, with Filipinos second. All the fishermen and cannery hands were carried on the ship's articles; they shared the risk of the voyage, the fishermen being paid by the quantity and quality of their catch and the cannery hands according to the number of cases packed at the cannery. The fishermen also served as crew of the ship on the voyage. They organized about 1900 under the wing of the Coast Seaman's Union and generally shipped under a union agreement. The cannery hands had no organization during the period when the *Star of Scotland* was engaged in the fishery; they were recruited by labor agencies from among the agricultural workers of the Pacific Coast.

The homeward trip from Alaska was something of a race, the ships sailing from the canneries around Bristol Bay as soon as the pack was stowed, and generally all getting through Unimak Pass by the end of August. During most of her career, however, the *Star of Scotland* went only to Kodiak Island, and left somewhat later, her earliest date of return to San Francisco being 8 October 1913 from Larsen Bay against 23 August 1925

Bark *Star of Scotland*, ex-*Kenilworth*

Reproduced from a photograph owned by Edward Strong Clark





Bark *Star of Scotland*, ex-*Kenilworth*

Reproduced from photographs owned by Edward Strong Clark

from Bristol Bay, while the latest dates were 11 November 1910 and 7 September 1923, respectively. Captain Rasmussen was in the ship only two trips, being followed by Captain B. J. Larsen, while Captain T. A. Thomsen took her over in 1919. In 1920 she made the return passage from Karluk, a distance of at least 1,700 miles, in one hour under eight days. About 1915 her accommodations were improved by lengthening her poop to 143 feet, thereby increasing her tonnage to 2,598 gross and 2,233 net.

Several of the Sewall steel fleet followed *Star of Scotland* into the Alaska Packers Association service. The triplets built for Standard Oil, *Astral*, *Acme* and *Atlas*, were all bought before 1913, *Atlas* as *Star of Lapland* becoming the Packers' flagship. The little *Kaiulani*, and later the *Edward Sewall* also were acquired. All the Alaska Packers ships were kept in first-class order and their ratings at Lloyds, Veritas, or the American Bureau maintained. The company has a basin and shipyard at the foot of Paru Street, Alameda, where the ships lay during the winter and were fitted out in the spring. They were painted with black topsides, red boot-top, and buff spars and deck houses.

In 1922 the Association added the last two sailing vessels to their fleet, the *Star of Shetland*, formerly *Edward Sewall*, and the *Star of Falkland*, formerly *Arapahoe*. But the day of sail was doomed, and in 1925 the company bought its first large steamer, the *Arctic*. Another, the *Bering*, was added the next year. Each steamer could do the work of two of the largest sailing vessels in the fleet, and the smaller and older units were laid up and disposed of as fast as buyers could be found. Eight of the nine surviving wooden vessels and five of the six iron ships had been sold by 1927, and in that year the *Star of Scotland* stayed idle at her berth at Alameda. In 1928 another steamer, the *Chirikof*, was added. Crews willing to sign on the remaining sailers became hard to find; ten days in a steamer was a better proposition than a month in a windjammer. The year 1929 saw the last voyages made by any of the sailing fleet to Alaska — two vessels, towed most of the way up and back. In 1930 the *Star of Scotland* was sold to Lew Lockhart of Los Angeles to become a fishing barge. The trip to her new home port was made at the end of a towline; there the yards were sent down from all but her foremast, and as a sort of a barkentine she spent the next eight years at a permanent mooring off Santa Monica.

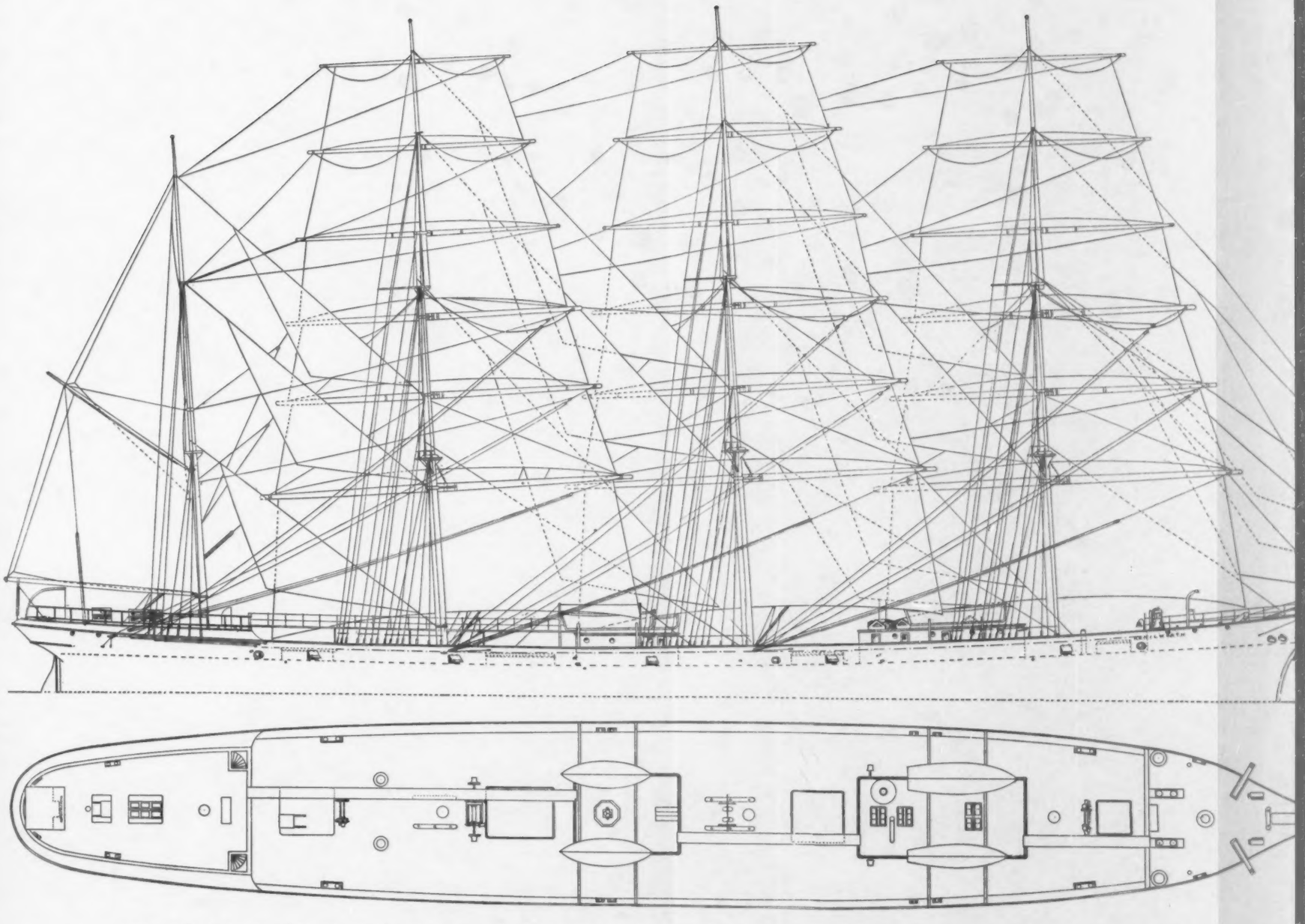
There are no streams or lakes to speak of in Southern California, but the ocean teems with fish, and about 1924 someone hit upon the idea of stationing a hulk a mile or so off shore, providing transportation, bait and tackle, and letting the general public try its luck at fishing for a dol-

lar or so a day. These fishing barges have now become an institution, and a score or more old sailing vessels have found their last usefulness here. Every winter or so one is driven ashore, and a couple have been cut down in fog by blundering steamers, with some loss of life; but the *Star of Scotland* survived these hazards. A more interesting fate was in store for her.

The success of the fishing barges suggested to someone else the plan of moving a hulk beyond the three-mile limit, providing roulette wheels and dice games in place of fishing poles, and separating the general public from its money in a swift but entirely legal manner. One of the first of these enterprises was the old barkentine *James Tuft*, renamed *Casino*, which became the victim of pirates, and eventually drifted in flames onto a beach where she created a placer mine of dimes and nickels. A successor to her was soon found in the shape of a concrete tanker hull left over from World War I, which was fitted out under the name *Monte Carlo* only to be wrecked at San Diego in the winter of 1936-1937. In 1935 the steel four-masted bark *Mary Dollar* became the gambling barge *Tango* off Long Beach, and shortly afterwards the composite steamer *Mount Baker* was similarly converted.

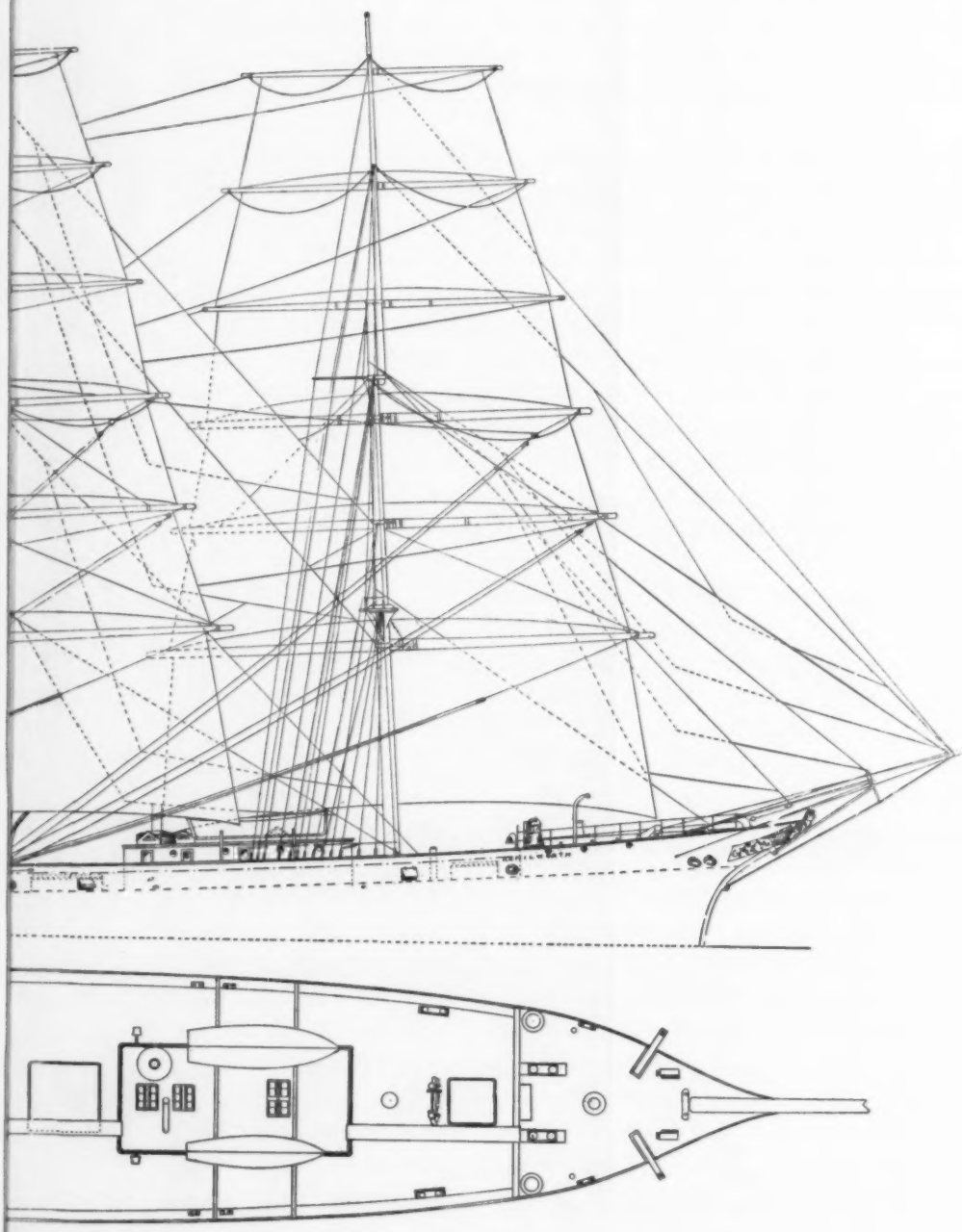
It was into this select company that the *Star of Scotland*, under the new name *Rex*, fell early in 1938. In February of that year she was bought from Lockhart by A. C. Stralla, a colorful individual better known as Tony Cornero, and transferred to his Rex Corporation. Her masts were cut out, bowsprit and figure-head removed, bulwarks burned off forward and aft to a horizontal line, and a deck-house built covering all the vessel except the fo'c'sle head. She looked in fact not unlike a nursery Noah's Ark — a neon-lighted Noah's Ark, for at night she was outlined in red lights. The work was all done according to the strict Federal specifications for passenger vessels, the sides lined with life-rafts, and the proper riding lights carried; the gambling ships scrupulously obeyed all the laws that could be enforced on the high seas. An old stationary steam engine, once part of an oil-well rig, was mounted on the fo'c'sle head to handle the two anchor chains. On the lower deck was a dining-room and a bingo parlor. The upper deck had on one side a bar the length of the ship, while the other side was lined with three hundred slot machines of all denominations. In between were roulette wheels, crap tables, black jack and faro games, a Chinese lottery, and the other diversions of a Western gambling house. An armed guard patrolled the roof of the deck-house day and night as a precaution against repetition of the *Casino* incident.

The organization of these gambling ships was thorough. A separate



Sail and deck plan of bark *Kenilworth,* traced before 1900 by G. B. Douglas from the original drawing then in the possession of Captain J. G. B

Scale: $\frac{1}{32}'' = 1'$



the original drawing then in the possession of Captain J. G. Baker.

corporation cashed checks for a percentage; these, not being gambling debts, were actionable at law. Another separate corporation operated the water taxi service, the fare being twenty-five cents outward and the ride back free. Some of the barges advertised free dinners as an inducement for visitors; but the free dining-room was generally found to be small and crowded, and the hungry could wait in line or patronize a more spacious dining-room at night-club prices. An amusing feature of the newspaper advertising was the way the powerless hulks were glamorized as 'S. S. *Rex*' and 'S. S. *Tango*,' with cuts of three-funnelled liners.

Under Captain George Kirkland, whose chief job was to keep the gangway side — starboard — to leeward and the bow quartering the swell, the *Rex* was anchored three and a half miles from shore in Santa Monica Bay. On 13 May 1938 she was raided by combined city, county and state forces, and fifty-one employees were arrested; but on proof of the distance from shore the courts admitted lack of jurisdiction. The *Rex* and the other barges were able to continue operations for another year unmolested. But the end was now in sight. Los Angeles elected a new mayor in a recall election, and a campaign began to be directed against the gambling hulks. Legislation was introduced in Congress to prohibit gambling on vessels under Federal jurisiction or the operation of water taxis to them; to this Cornero, who by now was spokesman for the group of four vessels, replied with a threat to transfer the *Rex* to Japanese registry. At the end of July 1939 state officials gave the barges three days to cease operations; when this expired they were raided and the 'Battle of Santa Monica Bay' took place. Cornero called for the protection of the Coast Guard and rigged fire hoses to hold off the raiders but after a couple of days he capitulated and the *Rex* was towed into Los Angeles Harbor. The courts found that the three-mile limit in Santa Monica Bay should be measured from a chord between the headlands, not from the shore, and the day of the gambling ship has ended. The owners of the *Rex* are said to have invested $250,000 in her, and to have doubled their money.

The barge lay all during 1940 in the roadstead in Los Angeles Harbor. Early in 1941 she was sold to Frank Hillenthal and associates of Santa Monica, after survey showed her hull still sound. Her owners rounded up enough business for her in lumber charters to Africa to justify rerigging her under her old name of *Star of Scotland*. Under the direction of K. M. Walker of San Diego, a graduate of the Seattle Construction and Drydock Co. and a member of the crew of the Sewall four-masted bark *William P. Frye* on the voyage when she was sunk by the *Prinz Eitel Friedrich*, she is being rerigged as a six-masted schooner, with West Coast leg-of-

muttons on all six masts and a triangular 'squaresail' on a yard on the foremast. The masts are 150-foot sticks of Oregon pine, with 40-foot booms, and the schooner rig will require a crew of twenty, accommodated in double staterooms, instead of the twenty-seven she required as a square-rigger. With her bulwarks built back up to the old sheer line and a new set of deck fittings, the *Star of Scotland* should be back in service by the time the ink is dry on this account of her.

The following abstract of her voyages under sail is of interest both in showing the high quality of her average performance[3] and in giving an idea of the nature and quantities of cargo[4] carried by an American sailing vessel in the later days of sail.

Year	*Left*	*Arrived*	*Days*	*Cargo*
1887	Liverpool	San Francisco	131	
1888	San Francisco	Newcastle, N.S.W.	41	
	Newcastle, N. S. W.	San Pedro	88	Coal
	San Francisco	Cork	105	Wheat
1889	Liverpool	San Francisco	128	
1890	San Francisco	Liverpool	101	Wheat, 3404 T.
	Liverpool	New York	29	Ballast, 1000 T.
	New York			
1891		Calcutta	120	Case oil, 93,030 cs.
	Calcutta	New York	100	Jute
1892	New York	Astoria	118	General, 3414 T.
	Astoria			
1893		Queenstown	113	Wheat, 3410 T.
	ordered to Havre			
	The Lizard	New York	27	Chalk, 1000 T.
	New York	Shanghai	135	Case oil, 94,000 cs.
1894	Hong Kong	New York	92	
	New York	San Francisco	116	General, 3406 T.
1895	San Francisco	Honolulu	24	
	Honolulu	Philadelphia	91	Sugar, 4003 tons.
	New York			
1896		San Francisco	144	General, 3397 T.
	San Francisco	Honolulu	19	Ballast, 670 T.
	Honolulu	New York	98	Sugar, 3863 tons.
	New York			

[3] Her career as a British vessel is given by Lubbock, *The Downeasters* (Glasgow, 1929). M. W. Hennessy, *The Sewall Ships of Steel* (Bath, 1937), covers her operations under the Sewall ownership. The Alaska Packers Association has furnished the details from 1909 to 1920, and the remainder is from the files of the *Weekly Commercial News* of San Francisco.

[4] Abbreviations: 'T' for long tons; 'tons' for short tons; 'cs' for cases. A case of oil (kerosene) is two 5-gallon cans; a case of salmon four dozen one-pound cans or the equivalent.

Year	*Left*	*Arrived*	*Days*	*Cargo*
1897		San Francisco	115	General, 3477 T.
	San Francisco	Honolulu	16	Ballast, 785 tons.
	Honolulu	New York	112	Sugar, 3893 tons.
	New York			
1898		San Francisco	118	General, 3437 T.
	San Francisco	Hilo	15	
	Hilo	Valparaiso (afire)	55	Sugar, 3851 tons.
	Valparaiso	New York	66	" " "
1899	New York	San Francisco	103	General, 3346 T.
	San Francisco			
1900		Queenstown	134	Wheat, 3478 T.
	ordered to Leith			
	Leith	Philadelphia	28	Ballast, 900 T.
	Philadelphia	San Francisco	138	Coal, 3373 T.
	San Francisco			
1901		Queenstown	115	
	ordered to Birkenhead			
	Birkenhead	Philadelphia	17 1/3	Ballast, 900 T.
	Philadelphia	Surabaya	88	Iron pipe, 3258 T.
	Surabaya	Port Townsend	79	
1902	Tacoma	Queenstown	131	Wheat, 3305 T.
	ordered to Hamburg			
	Hamburg	Vancouver	124	Cement, 3148 T.
1903	Port Angeles	Honolulu	22	Coal, 2309 T.
	Honolulu	Philadelphia	111	Sugar, 3875 tons.
	New York			
1904		Kobe	147	Case oil, 94,606 cs.
	Kobe	Hilo	44	
	Honolulu	Philadelphia	100	Sugar, 3955 tons.
	New York			
1905		Manila	230	Case oil, 92,706 cs.
	Manila	Hong Kong (docked)	14	
	Hong Kong	Newcastle, N.S.W.	82	
	Newcastle, N.S.W.	Honolulu	50	Coal, 3600 T.
1906	Hilo	Philadelphia	142	Sugar, 3491 T.
	Philadelphia			
1907		Montevideo (distress)	181	Coal, 3410 T.
	Montevideo	Rio de Janeiro (")	152	" "
	Rio de Janeiro			
1908		San Francisco	88	Coal, 3100 T.
1909	San Francisco	Ladysmith, B.C.		
	Ladysmith	San Francisco		Coal, 3664 T.
	San Francisco	Loring, Alaska		Cannery supplies
	Loring	San Francisco		Canned salmon.

Year	*Left*	*Arrived*	*Days*	*Cargo*
1910	San Francisco	Ladysmith, B.C.		
	Ladysmith	San Francisco		Coal, 3408 T.
	San Francisco	Loring		Cannery supplies
	Loring	San Francisco		Canned salmon.
1911	San Francisco	Larsen Bay, Alaska		Cannery supplies
	Larsen Bay	San Francisco		Canned salmon
1912	San Francisco	Larsen Bay		Cannery supplies
	Larsen Bay	San Francisco		Canned salmon
1913	San Francisco	Larsen Bay		Cannery supplies
	Larsen Bay	San Francisco		Canned salmon
1914	San Francisco	Larsen Bay		Cannery supplies
	Larsen Bay	San Francisco		Canned salmon
1915	San Francisco	Larsen Bay		Cannery supplies
	Larsen Bay	San Francisco		Canned salmon
1916	San Francisco	Larsen Bay		Cannery supplies
	Larsen Bay	San Francisco		Canned salmon
1917	San Francisco	Larsen Bay		Cannery supplies
	Larsen Bay	San Francisco		Canned salmon
1918	San Francisco	Larsen Bay		Cannery supplies
	Larsen Bay	San Francisco		Canned salmon
1919	San Francisco	Larsen Bay		Cannery supplies
	Larsen Bay	San Francisco		Canned salmon
1920	San Francisco	Karluk, Alaska		Cannery supplies
	Karluk	San Francisco	7d 23h	Canned salmon, 85,000 cs.
1921	San Francisco	Karluk		Cannery supplies
	Karluk	San Francisco	13	Canned salmon, 61,300 cs.
1922	San Francisco	Karluk	18	Cannery supplies
	Karluk	San Francisco	22	Canned salmon, 59,700 cs.
1923	San Francisco	Bristol Bay, Alaska	21	Cannery supplies
	Bristol Bay	San Francisco	26	Canned salmon, 85,300 cs.
1924	San Francisco	Bristol Bay	27	Cannery supplies
	Bristol Bay	San Francisco	21	Canned salmon, 33,500 cs.
1925	San Francisco	Kvichak, Alaska	24	Cannery supplies
	Kvichak	San Francisco	23	Canned salmon, 15,000 cs.
1926	San Francisco	Kvichak	30	Cannery supplies
	Kvichak	San Francisco	23	Canned salmon, 37,000 cs.

The Routine Trade of Salem under the Confederation Congress

May 1783 - October 1789

BY JAMES DUNCAN PHILLIPS

WHILE the pioneers of commerce in Salem were working out new avenues of trade, the little ships were trying to earn their bread and butter along the well-tried lines.[1] The old staple surplus articles must still be sent somewhere for sale and the old staple necessities which we could not produce must be found and brought home. Thanks to the vigor of John Adams in negotiating the peace treaty which ended the Revolution, our fishing rights on the Grank Banks had been preserved. The fishing fleet had been reorganized and was soon at work again. Two commodities we had to have for the fishing fleet, namely, salt for the fish and rum for the fishermen. Lumber, salted meats and dairy products we had in abundance, but we were short of flour, rice and all the standard tropical commodities like cocoa, sugar, molasses, coffee and spices. We had wool and flax but we lacked dyestuffs and unless we were to wear dingy homespun, we must have dyes; indigo, logwood and others. Cotton was beginning to be used in weaving and had to be brought in from abroad. The ladies had begun to covet silk dresses and Leghorn hats and never in the history of this country has the taste for good wine been so exacting as during the latter years of the eighteenth century. Lemons, raisins, olives and other table luxuries also were coming into fashion.

[1] There are no custom-house records still available for the period during which Salem commerce operated under the Articles of Confederation after the Revolution. All entrances and clearances had to be dug out of the Salem newspapers. The late Henry Noyes Otis painstakingly collected these for me, and they were published in the *Essex Institute Historical Collections*, LXXV (1939), 135-158, 249-274, 358-381, LXXVI (1940), 68-88, where there is a detailed account of the sources utilized. Tidbits have been culled from Rev. William Bentley's diary and the biographies of Derby, Gray and others in Freeman Hunt's *American Merchants*. The ownership of vessels has been dug out of lists of ships built for various merchants in William Leavitt, 'Materials for the history of ship building in Salem,' *Essex Institute Historical Collections*, VI (1864), 136-140, 171-175, 226-227, 252-255, VII (1865), 207-213, and from Gardner W. Allen, *Massachusetts Privateers of the Revolution* (Boston: Massachusetts Historical Society, 1927). There is no record of the registry of ships in this period, and ownership is not always easy to determine. Often the registry as recorded in S. W. Phillips and A. F. Hitchings, *Ship Registers of the District of Salem and Beverly Massachusetts 1789-1900* (Salem: Essex Institute, 1906) gives a clue to earlier ownerships. Finally the infinite number of manuscripts in the Essex Institute files give varied and fascinating information to one willing to spend hours in searching. The trouble is one does not know what he is searching for, and interesting items suddenly appear.

Moreover this was a period when everything that moved at all moved by water. Even the turnpike roads had not yet been built to any extent and the railroads were still half a century in the future. While a week on the road would take you to New York with fair comfort, a good schooner might get you there in three days.[2] If you wished to go to Philadelphia or further south a staunch little coastwise brig was undoubtedly the easiest way. The *Salem Mercury* of 9 September 1788 for instance quaintly announces 'In the sloop *Alice*, Captain Needham, which arrived here from Philadelphia, came passenger the Lady of Timothy Pickering, Esq. formerly of this town — now, of the county of Luzerne, in the state of Pennsylvania.'

Even the short hauls of freight were done by water. Firewood by the cord was landed on the wharves from the coastwise ports to the eastward and hay from Ipswich and Newbury not to mention the clams, important even then though not in the fried condition but for bait, chiefly came through the Cape Ann Canal.

Our trade with Canada was from the beginning disappointing. In 1783 and 1784 we cleared about a dozen ships for Canadian ports, never more than six arrived in any one year. We sent one vessel to Quebec and she was not allowed to enter so brought her cargo home.[3] The trade with Nova Scotia was the most considerable and probably represented contacts with our Tory relations and friends who had settled there. Port Roseaway, the delightful old name of Shelburn, often occurs.

The coastwise trade to the southward was far more important. Nearly three ships a month left for southern ports of the Confederation and about the same number came back. About a third of these represented trade with Maryland and another third that with Pennsylvania, Virginia and the Carolinas. Baltimore was the chief port with no other even a good second. Maryland and Pennsylvania sent us most of our flour of which there was never enough raised in New England to supply the non-agricultural coastwise towns. Before the Revolution we had brought in over 6,000 barrels a year not to mention 10,000 bushels of corn and this activity southward represented a resumption of that trade. Also tar and turpentine were needed for shipbuilding and could be had in the southern states. The outward cargoes were not so easily accumulated but the Southern planters liked New England rum and were not averse to the finer wines which Salem ships were bringing from Spain and the Wine Islands. Many curious manufactures also were creeping southward and

[2] *Salem Mercury*, 28 April 1789.
[3] *Salem Gazette*, 28 August 1783.

if some of the lovely mahogany furniture in the fine houses of Virginia and Maryland could tell its tale, it might say 'made in Salem.' Anyway we sent quite a lot of beds and desks and chairs and dining-room sets down there.

These vessels in the coastwise trade seemed to go and come whenever the spirit moved and almost any week in the year there might be a lot of entries and clearances or for several weeks there might be none. Some of the smaller brigs, schooners and sloops made more or less regular trips but at any moment one of the big overseas vessels might break in between longer voyages and make a single trip. It is also true that some of these voyages both going and coming might be part of a longer voyage like the trips to Charleston for rice for the Baltic or the voyage of the schooner *Rebecca* from Lisbon to South Carolina with brandy.[4] There were always more clearances for the southern ports than entries from them, so it appears that ships were more liable to call for cargo on outward trips than to leave part of their homeward bound cargoes.

Europe was steadily a good customer. The rise of the new Baltic trade is outside this discussion but Spain and France had been our best customers before the Revolution and continued to be during this period. At first one ship a month entering and clearing was the average but in the years 1787, 1788 and 1789 it rose to two ships a month. Four or five ships a year entered from Madeira or the other Wine Islands with wine, or salt from the Cape Verde Islands but evidently the laws of trade shut us off effectually from the British Isles and only in 1788 were there more than casual voyages.

To France and the Spanish peninsula we sent sugar from the West Indies, fish, barrel staves and hoops, lumber and provisions and brought home wines, brandies, textiles, fancy goods of all sorts and, as the French Revolution progressed, loot of all sorts. One wonders how good a title the Frenchmen who sold to Salem captains the wonderful old French mirrors, paintings, and furniture which still adorned many Salem mansions had to the goods.

Curious cargoes which were sent from Spain included a prize jackass. The King of Spain planned to send General Washington four thoroughbred asses and evidently for safety distributed them between different vessels. Captain Ashton was assigned one on his voyage home from Bilbao in October 1785. He used the greatest care but the sad fact was that the prize ass did not survive the voyage so never became the ancestor of any Virginia army mules.[5]

[4] *Salem Mercury*, 5 May 1787.
[5] *Salem Gazette*, 25 October 1785.

Most of the arrivals from France were from the Bay of Biscay and more than half of them from L'Orient which was a port established in 1720 by the French East India Company and popular with our ships as a port of entry but seldom heard of since till it became the German submarine base in 1940. Noirmoutier and the Isle of Rhé or Rea or Ré were two other French ports near La Rochelle often visited but now quite unknown to the average traveler and not too easily identified in the varied spelling of the custom-house entries.

During this period there were a few voyages to the coast of Africa which are seriously open to question as slave traders. Captain Joseph Robinson in the ship *A frica* cleared in March 1785 for just 'Africa' and word came later that he had died on the Guinea coast. The ship returned a year later as from St. Eustatia under the mate, one Revell. The next year the brig *Favorite* sailed for the same vague destination 'Africa' under Captain William Robinson and in due time returned home via Martinique reported as having been to Guinea with the news that the first mate and the brother of the captain had died. The brig *Gambia* which sailed in November 1785 is also definitely charged with being a slaver but there is no record of her ever returning to Salem.[6] In September 1788 the schooner *Felicity* left for the Cape Verde Islands under Captain William Fairfield.[7] According to a letter from his son to his mother, they took on thirty-five slaves on 13 March on the African coast and thirteen days later 'the slaves Rised upon us, at half past seven, my Sire and all hands being Forehead except the man at the helm and myself.' Well, the slaves got possession of some of the fire-arms and shot the captain but 'still we strove to subdue them . . . and killed two of them.' The final end of this bloody fight was 'we put them in irons and chained them' (MS. letter of William Fairfield addressed to Mrs. Robert Fairfield, Salem).[8] The slaves were sold at Cayenne and the *Felicity* (which should have been named the *Grief*!) entered 30 June 1789 as from Martinico under Captain Ober who was probably the first mate.

In these ventures the owners were probably chiefly Captain Joseph White and the captains of the vessels but it is possible that Robert Stone and Joseph Waters had an interest as they did in later ones. These voyages were contrary to the laws of the commonwealth and there were not lacking voices to denounce them. In fact Dr. Bentley got himself into

[6] Joseph B. Felt, *Annals of Salem* (2nd ed., Salem, 1842-1849), II, 291.

[7] *The Diary of William Bentley, D.D., Pastor of the East Church, Salem, Massachusetts* (Salem: Essex Institute, 1905-1914), I, 104, 105, 123.

[8] Reprinted in *Essex Institute Historical Collections*, XXV (1888), 311.

considerable hot water by outspoken opposition.[9] One notes with a bit of irony the fact that he was invited to offer prayers for Captain Fairfield.[10]

The whole business was very small. None of the vessels exceeded seventy-eight tons except perhaps the *Africa* and there were not over five voyages in these six years with perhaps two or three more before 1800.

It was the legitimate West India trade that was the mainstay of the ordinary humdrum shipping. It employed more vessels than all the other branches of trade put together. During the entire period more than half of the entrances and clearances at Salem were for West India trade but it was chiefly in smaller vessels, sloops and schooners and little brigs but here again you sometimes find the big ships putting in their spare time with a run to Cape François, 'Statia or some other port.

It seems probable that the smaller vessels went fishing in the summer months and took a trip to the West Indies in the winter. They sometimes left, or planned to leave, too late and got frozen in but usually they got away safely early in December and straggled back during the early spring. During the week of 10 December 1783, one of the largest weeks noticed eighteen vessels left Salem for the 'West Indies,' not one specifying any port. These included three ships, twelve brigantines and three schooners and were the larger vessels but a very considerable number of sloops were employed in the trade. The rig, however, did not by any means always indicate size. There were ships and brigs of ninety and a hundred tons and sloops and schooners of a hundred and a hundred and fifty.

There seemed to be great reticence about indicating what port they were bound for. Perhaps they did not always know and were governed by the chance of wind and weather but even if they did, they wanted the greater freedom of a general clearance and there was the possibility that they might sell a cargo at an illegal port for which they could not wisely have carried clearance papers, if the profits were extraordinary, instead of at an open one for which they could have cleared.

For the first three years a good many vessels arrived from the English islands, Jamaica, Antigua, Granada and especially Turk's Island, the salt port in the Bahamas. With the end of 1785 this stopped short. The next year there were no arrivals at all, then a very few from St. Lucia and Turk's Islands. The stopping of this trade was important as many of our English goods had come in via the British West India Islands in a trade against cod-fish which also helped the fish market.

At the same time (1786) the French and Spanish islands, from which

[9] Bentley, *Diary*, I, 105, 212.

[10] Bentley, *Diary*, I, 124.

the arrivals had figured over fifty vessels a year, shut down on us also to some extent. The trade dropped fifty per cent and arrivals from Guadeloupe, Martinico, Cape François and Port au Prince or Aux Cayes alone remained important.

Presently the trade with the Dutch islands of St. Eustatia and St. Martin's began to rise in importance and surpassed all the other ports from which West India vessels arrived in 1788 and 1789. This appears to have been contrary to the general trend of American trade. Scattered vessels also arrived from the Danish Virgin Islands. This did not make up for the old trade with the English islands and it is clear that England was reabsorbing the trade with her colonies[11] and even the illicit trade was steadily diminishing.

The outward bound cargo on all these voyages was similar and consisted of varying quantities of dried fish, barrels of pickled mackerel, salt beef and salt pork, boards and shingles, barrel staves and hoops and cheese, butter and candles. A few shoes were appearing among the later shipments. Live stock in the shape of horses and occasionally a flock of sheep appear as deck loads. The cargo homeward was always molasses, sugar, coffee, cocoa, cotton and a few other articles. A commodity little in bulk but of high value was indigo.

During the entire period the record, lacking a few months in 1786 which it is not possible to find, shows for six and a half years five hundred and sixteen clearances for the West Indies and five hundred and one arrivals.[12] The difference is easily accounted for by the triangular voyages and vessels lost or sold. While the vessels were small, probably none exceeding three hundred tons and one hundred and fifty tons a high average for all, the aggregate amount was substantial and the cargoes were of relatively high value as cargoes go. There were no loadings of ore, coal, fertilizer or other bulky and low value commodities. Not a little cod-fish and other goods changed hands for spices and we drew a good deal of our precious metal from the West Indies.

These voyages were not all plain sailing by any means. The wind did not always blow as desired. The brig *Lydia* made a trip home from Cape François in fifteen days and the schooner *Sally* in seventeen days,[13] but it also took Captain Ward forty days from St. Nicola's Mole[14] and the brig

[11] Edward Channing, *History of the United States*, III, 422.

[12] J. D. Phillips, 'Ocean borne commerce,' *Essex Institute Historical Collections*, LXXV (1939), 142, 144.

[13] *Salem Mercury*, 11 and 25 August 1789.

[14] *Salem Gazette*, 15 February 1785.

Ranger forty-two days from Aux Cayes to New York.[15] There were also many outright losses. The schooner *Pilgrim* piled up on Ocracoke Bar in North Carolina, Captain Revel lost his vessel on Plum Island, the schooner *Hawke* went ashore near Falmouth on Cape Cod and the schooner *Nancy* near Provincetown, Captain Hall was wrecked at Barnstable and the brig *Ranger* which had already lost her captain Adam Welman was wrecked in Vineyard Sound. It will be noticed that most of these losses were near home and the alleged terrific West Indian hurricanes apparently took but one vessel during the period (and that was not in the hurricane season) when Captain Hathorne lost the *Mary Ann* at Martinico.[16]

There were other troubles. The crews caught yellow fever and vessels got home, after losing several men, with all on board still sick with it. They picked up other tropical diseases but inoculation was beginning to set up a defence against smallpox, the dread of the earlier days. The laws kept changing and vessels were seized for real or alleged violations of trade. The schooner *Patty* was seized at Aux Cayes[17] and the ship *Rambler* a little later at Cape François[18] when the French got stirred up about something.

It must have been a most interesting life for the captains. During the right seasons there were often three or four Salem vessels and as many more from other New England towns in the more important ports like Aux Cayes, Cape François, Martinico or St. Eustatia. The masters all knew each other and visited from vessel to vessel. The latest arrivals brought news and gossip from home and also from the ocean spaces where they had 'spoken' other ships and those leaving for home collected news and letters to take back. The home newspapers, which printed all the news they could get, reflect a good deal of this news mongering. Over their planter's punch the captains tried to garner information that would help their trading. The West Indies had not yet begun to revert to negroes and there was still a delightful and cultivated society among the planters and merchants and they welcomed the shrewd New England traders who in many cases were educated men and in all cases had the culture which comes from going about in the world and meeting all sorts of men and conditions.

[15] *Massachusetts Gazette*, 23 January 1786.
[16] *Salem Mercury*, 12 April 1789.
[17] *Salem Mercury*, 25 September 1787.
[18] *Salem Mercury*, 27 November 1787.

Present-Day Craft and Rigs of the Mediterranean

BY LIEUTENANT (J.G.) T. C. GILLMER, U.S.N.

THE maritime lore of the Mediterranean is complex, but, tangled and interwoven though the story is, it yet contains much of the world's important history. Europe has for centuries changed her face in this blue mirror of the middle sea. During centuries of struggle, with short intermissions for changes of cast, one peaceful group of mariners has quietly and patiently gone about its business off stage. The small craft of the Mediterranean, the common carriers and fishermen, seem to care little for the surrounding tumult. From historical accounts it would seem that the great world in turn has cared precious little for them. The world in passing having bothered little about them they have continued their existence relatively unchanged and untroubled.

Just as the people who sail these rigs live in centuries-old stone houses to which their wives lead donkeys laden from the markets, so their craft possess features similar to those of seven and eight hundred years ago. Because of their comparatively unchanging character these craft (the roots from which stemmed many of the vessels and rigs of our western seas), are worthy of an attention that has long been denied them.

In preparing the following article the lack of records limited the background considerably so that this lightly sketched material can, at best, be considered only as a contribution to the whole story. In order to confirm the impressions set forth, museums, marine rooms, and libraries in Genoa, Marseille, Naples and Venice were sought out. In this connection I am indebted to the officials and custodians who allowed me to examine old prints, legal documents, illuminated manuscripts and charts and the few existing models of the obscure craft. I am particularly grateful to M. Pierre Labarre of Marseille for his interest and co-operation.

The most prolific source of information was, however, the actual observation of the craft over a period of some two years in the Mediterranean. Many enjoyable moments were spent talking to the sailors, fish-

ermen and harbor keepers who take great pride in enlarging upon the qualities of their particular boats. It is from these first-hand observations and contacts that material has been drawn. Consequently, because my duties did not carry me into the eastern part of the Mediterranean beyond the Adriatic there is no mention of the numerous craft there. This picture then is one of contemporary western Mediterranean craft with some brief sketches of their background.

I

Lying along the historic route linking Northern Europe with the Mediterranean is the coast of Portugal. Ships passing to and from the Straits of Gibraltar to Great Britain, the Netherlands, Scandinavia, and other maritime nations of the North made Lisbon a key port. Because of the westernmost situation of Portugal on the Continent it was in the past, and still is, a jumping-off place to the Western Hemisphere. Trading expeditions and exploration ships fitted out and returned to the same port. Consequently traders and merchants from widely separated parts of Europe gathered here, and it is not surprising that today in the vicinity of Lisbon we find local sailing craft combining features of Northern Europe and the Mediterranean.

To note specifically a striking example, the visitor to Lisbon cannot escape noticing the harbor craft. They are the heavily laden sailing barges with the short hooked gaff, bluff bows and lee-boards of Dutch boats, but they also have elaborately decorated hulls with painted flowers and eyes on the bow — characteristics of the South (Fig. 1).

Of the fishing craft there is a peculiar type found in the vicinity of the mouth of the Tagus called the *Moleta*. On first sight this boat seems to combine characteristics of all the odd types in the world.

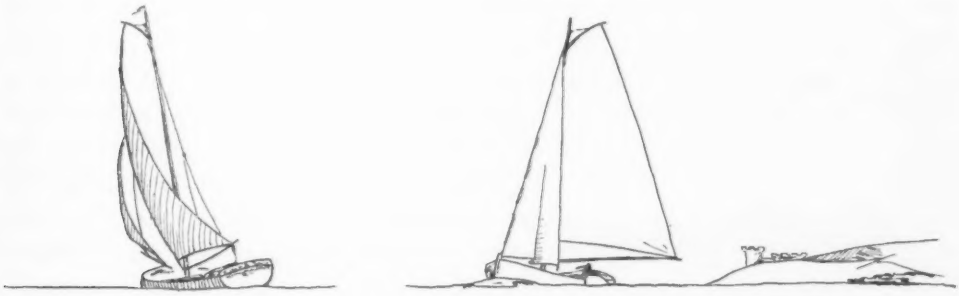


Fig. 1. Tagus River Barges, Portugal

The fundamental and ancient rig of the Mediterranean is the triangular or lateen sail, which is the primary element in the rig of the *Moleta* (Fig. 2). Although fundamentally she is lateen, the remainder of her rig is highly complicated, and before she is too hastily judged a

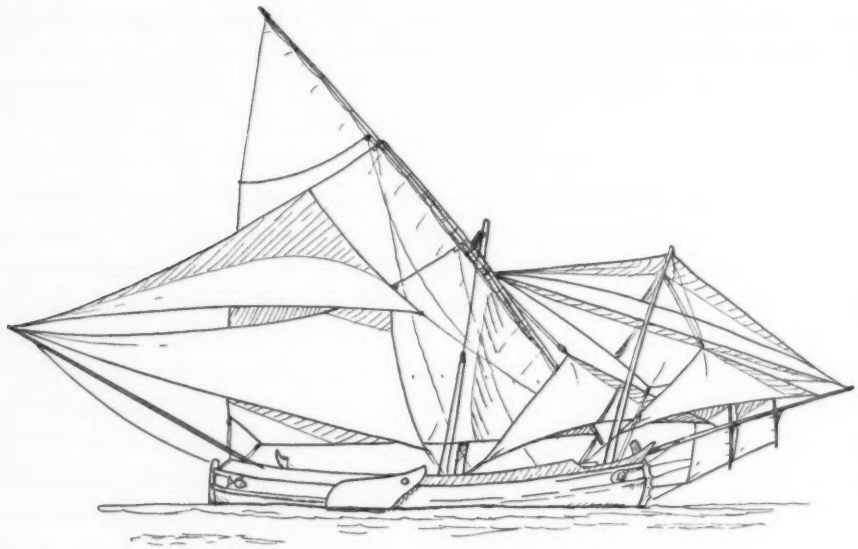


Fig. 2. Rig of Portuguese *Moleta*

sea-going freak the underlying idea should be mentioned. In laying trawls local fishermen find it to their advantage to sail directly to leeward and this results in an amazing but well-balanced arrangement of sail combined with an oddly constructed hull. Her hull appears to be of the standard Mediterranean double-end type and stripped of appurtenances and decoration above the water seems rather ordinary. The most radical feature, however, is found below water. The keel is in a recess in her bottom so there is no projection causing lateral resistance in the vessel's leeway movement (Fig. 3). The lower strakes near the keel form a concave surface and meet the keel at a higher point than the bilges. This construction makes for greater draft when the boat is heeled than when upright and allows it to be beached without falling over on its side. The sailing qualities are sacrificed however by

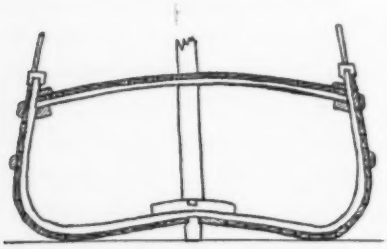


Fig. 3. Midship section of a Portuguese *Moleta*

this manner of building and consequently the requirements of straight forward sailing must be met by adding some form of flat surface. The lee-boards obviously of Dutch influence fill this need. A deep rudder projecting far below the hull is an additional aid to the lee-boards. The sloping washboards along the deck line giving added depth in the hull form another characteristic that is purely Dutch. The stem curves slightly inboard while the stern-post rises perpendicularly. Along the forward edge of the stem-post are remnants of what may have been the classic ram or beak. This is a controversial point: that such a vestige should exist so far from its origin after many centuries of disuse is highly questionable. The evolution of the old Greek and Roman ram can be traced more accurately in the purer Mediterranean types such as the *Tartanes, Chebecs* and *Pinks* and even in the little craft pulled up on the beaches. In the *Moleta* it is enough to say that those beaked projections on the stem serve a useful purpose as fairleads for her foresails.

The rig of this odd boat is even more amazing than her hull (Fig. 2). Although it appears to stand alone and unique among the small craft of the world it has a striking similarity to a boat common in the Gulf of Genoa. Essentially this rig is of two masts: the main near the midship line and the fore far up in the bow almost on top of the stem and raking sharply forward. There is no topmast on the main, and the sail is a pure lateen of comparatively large area. The foot of the lateen yard extends far forward, nearly to the stem, and the peak is high enough to drop the foot of the sail just above the rudder head. Here ends the purity of the rig. From the head of the foremast, which normally should carry another lateen, is peaked a triangular staysail, sheeted in aft at the mainmast and forward tacked down to the bowsprit, a highly steeved pole that extends forward and to starboard of the stem and foremast. Below this is another sail of similar shape but inverted so that the two form a diamond. Two more triangular sails carried forward could be best called jibs; however, they are set flying. They are of a low triangular form and set close to the bowsprit. Below the bowsprit are two square watersails and these are undoubtedly adapted from the medieval spritsails and the latter eighteenth-century 'Jimmy Greens.' They are not used to the same advantage however, being braced up vertically to utilize the wind on the beam rather than for a following breeze or for tacking.

Over the stern projects a pole similar to the sprit at the bow. This carries two large triangular sails, one above the other, both of which hoist by halyards rove through blocks on the lateen yard about a third of the distance from the peak. The entire effect of this rig is to give a balanced

sail area for leeward sailing. The sails, sometimes varicolored, though always faded, together with the gaily painted hull and the ancient eye on the bows, present an interesting and unusual picture.

Here in the *Moleta* of Portugal near the entrance of the Mediterranean it is not surprising that we should find the characteristic rig of the Mediterranean, the lateen. This triangular sail developed sometime in the Dark Ages and spread to many seas. In some cases it evolved into the fore-and-aft sail, so common even to the landsmen's eyes. At present the child is creeping back to the Mediterranean to gobble up its parent, the lateen.

The sailors of the Middle Sea are so conservative, however, that this change meets resistance and the lateen is still common.

Fig. 4. Straits boat (Note extensive lateen yard)

About the Straits of Gibraltar these small triangular sails serve to introduce the Middle Sea and instinctively give the observer the feeling that boats and the people who sail them have changed as little as the Rock itself. Along the shores of Spain and Morocco at the entrance to the Mediterranean is found a small boat similar in size and general appearance to all the other small craft of that sea (Fig. 4). In detail, however, there is not much similarity in any of these small craft. Although it would seem that they sprang from a common source their characteristics reflect the individuality of the races who built them. In the hull they are universally double-ended with the stem- and stern-post projecting well above the gunwale. In this the similarity ends, and as we go on through the Mediterranean it might be well to stop and view these little beach boats and note their peculiarities. One might well remark that the larger ships do not represent the oldest forms and methods as do the small craft. Instead they show in their size greater wealth, broader contacts and natural development along with world progress. In the more or less isolated dis-

tricts, the development then is roughly proportional to the size of the craft. The small boats of Catalan Bay at Gibraltar are a good example. They are from fifteen to twenty feet in length, ruggedly built with rather full lines. The stem projects about ten inches above the gunwale and is grooved or notched in the forward edge; a feature found only in these particular boats. The general appearance is one of neatness, but many of the boats here show the effects of great age and ownership

Fig. 5. Valencia Lake Barge, Lake Albufera

by an impoverished people This is due largely to their situation of semi-isolation and proximity to a land over which war and strife have swept back and forth for centuries.

The lack of paint, the rough hewn wood and the multi-patched sails do not indicate the good fortune of the fishermen in recent years, but rather their rugged perseverance and pride in their few poor possessions. Although the pride shown by brightly colored sails and hulls is not evident here, it is apparent that the condition of their boats is more important to them than that of any other possession. The boats are usually fitted with a single lateen sail for their motive power, leaving the

two-cylinder gas engines to their more prosperous relatives of the French coast.

For almost the entire length of the Spanish coast the small craft are identical with these weather-worn lateeners found near Gibraltar. From Malaga to Cartagena and Alicante I observed no characteristics to identify any particular district. However farther up the coast of Spain, near the fertile plains of Valencia, in a lake that is separated from the sea by a narrow grassy strand, exists a type that retains more of the medieval Mediterranean heritage than probably any craft sailing the blue sea.

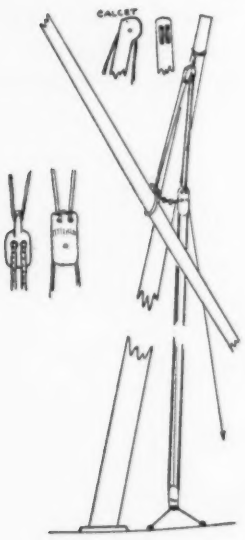


Fig. 6.
Methods of hoisting lateen yards

This boat is so simple in its design that it gives an almost classic impression. It is found only on Lake Albufera. Although but a few miles southwest of Valencia it is a region so remote and primitive that the boat has remained little changed through centuries and has never moved beyond its limits. This type, known as a Lake Barge or *Alijador del Lago* and used chiefly for transporting oranges and other produce, is about thirty feet in length, of shallow draft to negotiate the shoals of the lake, and has a good beam for ample cargo space and sail-carrying capacity (Fig. 5) . The lines of the hull are simple and graceful; a forward curving stem, a bold sheer and a sharp stern, all combine in a beautiful seat on the water. At first glance one might think she was related to the dragon boats of the Vikings so similar are the lines. Her rig however dispels that idea. A stout mast set amidships and raking forward carries an immense lateen sail. The yard is hung by a double halyard secured about one-third of the length from the forward end. The halyard is rove through sheaves set in the mast-head (calcet)[1] in the ancient Mediterranean manner, and the hauling part led to a double purchase (Fig. 6). The boat is free from stays and standing rigging of any description and the running rigging required for such a pure lateen rig is of the simplest sort. There is much about this lake boat of Albufera that suggests the past, not of a few centuries, but of a thousand years ago. The rig is the lateen, not as is usually found today or in the past century, but as it was when it first began to show

[1] Although the calcet is the more preferred method of leading lateen halyards in the Mediterranean a heavy double block is often lashed to the mast-head in its place. This will be seen later in such types as the *Tartane* (see Fig. 5[a]).

itself upon the seas. Somewhere between the seventh and eighth centuries the single square sails were canted down for sharper tacking. The foot of the sail was shortened and it became triangular; thus came the first of the universally recognized lateeners. This boat of Albufera seems to have ceased her development of rig here. The uniqueness is found also in features of her hull. Her light construction and sharp lines, in addition to suggesting antiquity, are well adapted to the protected waters in which she has survived.

Fig. 7. Catalonian fishing boat (Note beaching keels)

In the details of construction the craft of course shows many characteristic Spanish features. The single sail while of the most ancient form, embodies in some cases the principle of shortening sail so common along this coast. While reef points are usual enough, the seasonal winds seem to be of such a nature that it is more satisfactory sometimes in the winter season or heavy weather to telescope the yards, that is to slide the *pena* and *car*, as they are called, together and bend on a much smaller sail. This Albufera boat is also similar to the Catalonian fishing craft (Fig. 7)

in having an extremely high crown on the deck.[2] Similar too is a deck rail that is in reality mostly washboard. The gunwale itself is very light, not quite meeting the deck line. A long open hatch extends from a few feet abaft the bow almost to the stern. Much of the cargo usually overflows this hold and covers the deck, consequently bringing the boat much lower in the water than seems practical.

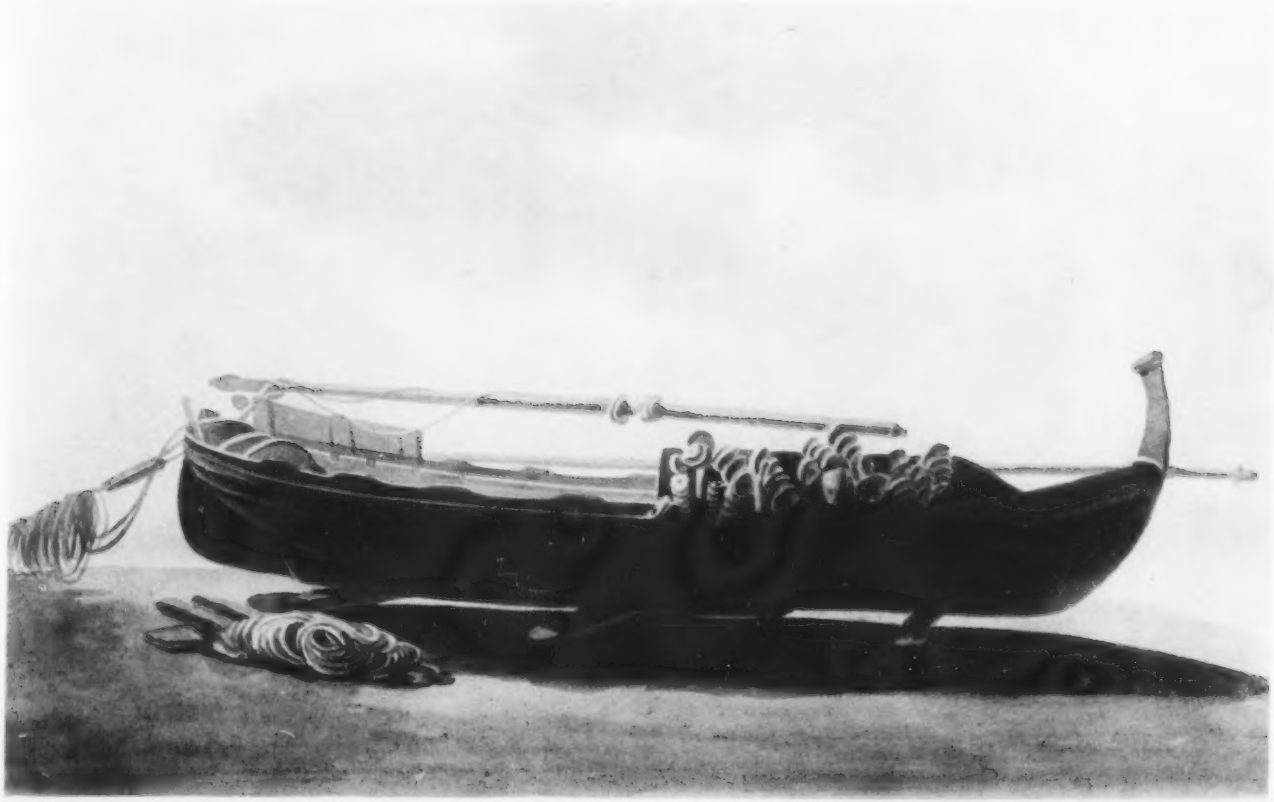
At this point it may be consistent to remark upon a feature common and distinctive to all craft of the western Mediterranean basin. It has been brought out briefly above that the stem projects upward above the gunwale and deck line. This is of a height greater than is found commonly on craft in other parts of the world. In every case of the various types of Mediterranean craft this stem is terminated by an ornament or

Fig. 8. Small craft stem heads

distinctive form. The commonest form of this cap or termination is one of the many variations of the crescent. This motif is a relic of the Moorish conquest of Spain and was an identifying mark of the Saracens and Moorish pirates decorating the stem heads of the old *feluccas* of the Spanish Coast. It was adopted by the French *Chebecs* and by a number of types of peaceful trading vessels as a form of decoration. Carried along hundreds of years it was modified to various forms, depending upon the locality, until it is seen today on countless boats of all sizes scattered along the Northern and Southern coast. Some are fully carved crescents projecting from the stem, some are rounded on the bottom and taper up to a point, others are more of the shape of a football or a sausage while still others merely cut the top of the stem in a segment of a circle (Fig. 8).

However not all of the stems of the Mediterranean boats are surmounted by this unmistakable crescent. The boats of Catalan Bay have a groove in the forward edge of the stem, others are capped with bright

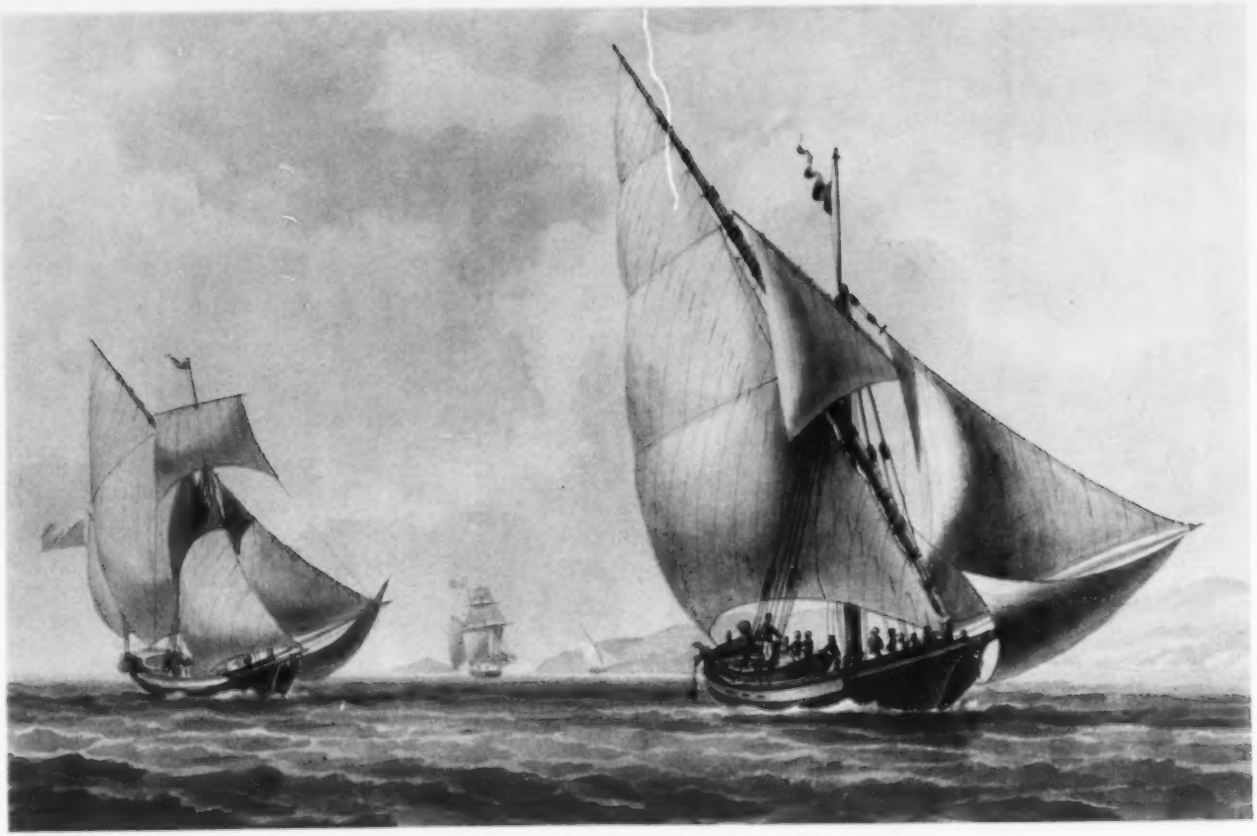
[2] The Catalonian fishing boats while similar are not related to those of Catalan, Gibraltar. They are native to Catalonia, Spain, and are found chiefly in the vicinity of Barcelona. They are now practically extinct. An excellent illustration of them in 1816 is found in one of the sketch books of Antoine Roux now in the Peabody Museum of Salem (Plate 5).



Catalonian Fishing Boat

From a sketch book of Antoine Roux, 1816, page 23, in the Peabody Museum of Salem

PLATE 5



Commercial *Tartane* [left] and Fishing *Tartane* [right]

From a sketch book of Antoine Roux, 1816, page 13, in the Peabody Museum of Salem

metal and among the lake boats of Valencia we find a distinctive cap that gives the impression of even greater age than the crescent of the infidels. It consists of a simply carved wooden piece set horizontally across the top of the stem instead of slanting forward and upward in the usual manner. It is of rectangular shape, rounded slightly on top with two parallel grooves, and is as simple and as fitting a climax for a beautifully carved stem as is the abacus for a Greek column.

II

It is difficult to follow the development of a type of vessel even in the case of major types where reasonably complete records have been preserved. When it comes to the small Mediterranean craft of today we can

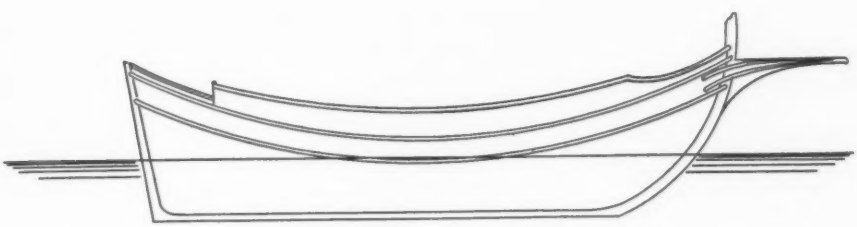


Fig. 9. Early *Tartane* profile, from Chapman, *Architectura Navalis*

study only their present design and reconstruct their origins solely through references and inferences. We cannot say that the rigs of these small craft of today or a few years ago are a refinement of those of a century ago, nor that they can be traced step by step and are now the result of painstaking study, experiment and skillful design. They are more the result of a sailor's love and pride in his individual property, built to please his eye and to meet the demands that maintain them yet as useful articles. They are *also* the result of trial and error, rigged to serve the purpose at hand according to their owners' ideas of necessity. They naturally fall into types and classifications because of strong sectional traditions and methods passed along from generation to generation.

In sea-going craft, however, many things are found in common because of contact. A typical craft existing along the southern shores of France whose name was once common is the *Tartane*. It is a definite example of how rigs and hulls can be changed by a generation of sailors until there is small resemblance to the original. The name is far older than the type as we know it today. It goes back to the twelfth century, to a small

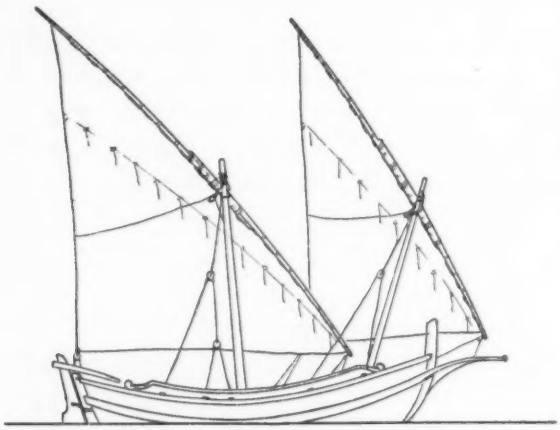


Fig. 10. *Tartana,* Italian, about 1650, from Chapman, *Architectura Navalis*

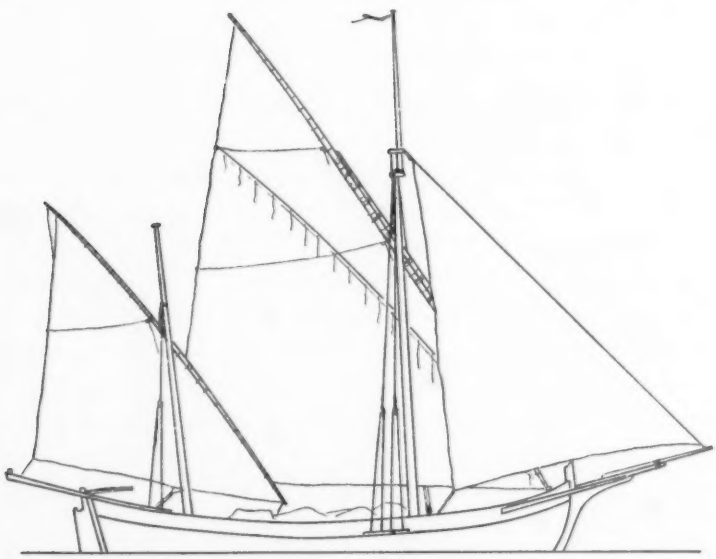


Fig. 11. French *Tartane,* about 1730, from a contemporary French sketch in the Museé de Marine, Marseille

'round' ship used by Genoese and Venetian traders called the *Tarette*.[3] During the seventeeth century a craft that bears closer relationship to the present *Tartane* was an Italian vessel of the same name, the *Tartana*.[4] The basic hull profile and rig of such a vessel is shown in Figures 9 and 10. To study the true *Tartane*, however, we need to go back to the eighteenth

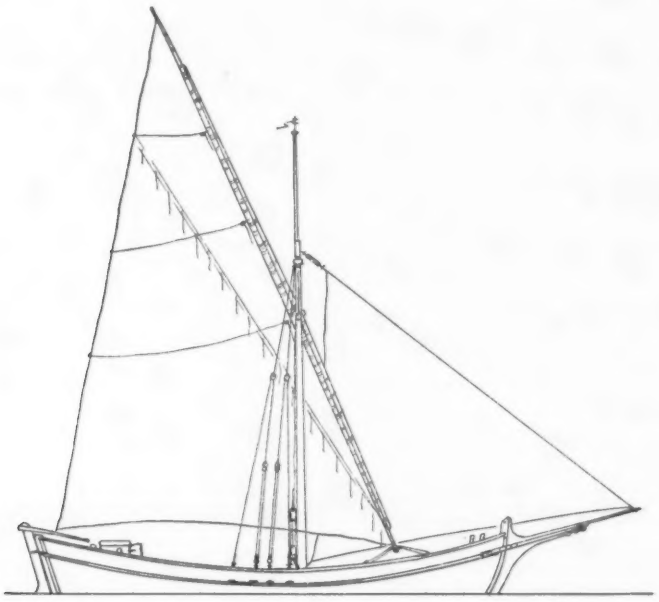


Fig. 12. *Grande Tartane*, 1789, from Amiral Paris, *Souvenirs de Marine*

century when the name for a common craft was the generic term *barque*. This name was applied to many types in Italy, France and Spain, but along the coast of Provence between Marseille and Genoa it designated a particular type which we know only by its general French term, *Barque Provençale*. The more or less standardized rig consisted of three masts; lateen fore and mizzen with either square or lateen main. Holding roughly the same relation to the *Barque Provençale* as a brig to a ship was a smaller craft of the district called the *Tartane* (Fig. 11). She had but two masts; lateen mizzen and either square or lateen main. Like the *Barque*

[3] F. C. Lane, *Venetian Ships and Shipbuilders of the Renaissance* (Baltimore: Johns Hopkins Press, 1934), pp. 4-6, 35n, 37, 40, etc.; Jal, *Arch. Navalis*, II, pp. 401-436; E. H. Byrne, *Genoese Shipping in the Twelfth and Thirteenth Centuries* (Cambridge: Mediaeval Academy of America, 1930), pp. 5-8.

[4] Chapman, *Architectura Navalis*; Jal, *Glossaire Nautique*; E. K. Chatterton, *Fore and Aft Craft* (London, 1911), pp. 34-35.

Provençale the *Tartane* had a double-ended hull with an overhanging superstructure for an after deck and the common false stem or beak extending out from the stem-post in place of a bowsprit. Her actual stem extended above the hull in exactly the same proportion as it does on the small boats of that district today and was topped by the same ornamental crescent cap. Probably these early craft were the first lateeners to employ the jib of northern craft.

Toward the end of the eighteenth century we notice the *Tartane's* lateen mizzen becoming more insignificant until it is dropped alto-

Fig. 13. *Tartane*

gether (Fig. 12). During this period the transition from two to one mast was, of course, gradual and the conception of a true *Tartane's* rig cannot be clearly defined. For a decade or two during the early nineteenth century two-masted and single-masted examples of the type existed simultaneously. Fortunately, however, it is possible to make a distinction in that traders continued to use the two-masters for some years while fishermen were beginning to adopt the single-masted rig. During this period, too, experimentation with sail combinations was popular. Triangular water sails and topsails were common as was the method of setting the large jib as a spinnaker. The commercial or trading *Tartanes*, probably because of their more extended voyages, sometimes employed square sails, and a topsail was almost universal.

An excellent illustration of these two *Tartane* types is preserved for us in an exquisite water-color by Antoine Roux (Plate 6). The single-masted *Tartane* of this period is essentially the sort of *Tartane* that has developed

with minor changes into the existing craft today (Fig. 13), embodying the same trim hull with a full sheer, rising bows and a gracefully formed sharp stern. She now has a long bowsprit extending over the old projecting false stem. This has become very similar to our well-known clipper bow. The vessel itself varies between forty and fifty feet in length on the water-line, being very beamy and with a greater draft than is common in other contemporary types. The mast is slightly forward of the amidships mark and is about the length of the hull on deck. Normally she will carry a topmast of almost the same length as the mast, making a lofty rig. The lateen yard is peaked so that the foot of the sail falls just inboard aft and just clears the forestay forward. It is slung to port according to convention and is hoisted by a heavy halyard arrangement of two sets of two-fold purchases. Unlike other lateeners the *Tartane,* as a comparatively recent addition, hoists a gaff topsail. This, carried as it is with considerable bravado and accent, adds strangely to the finished appearance of the rig and, along with two jibs, gives the craft a look of sea-going perfection that is hard to analyze. For beauty combined with seaworthiness the *Tartane* is without comparison in the Mediterranean. It is to be regretted, however, that in many instances today continued developments are altering her original appearance. Most notable is the change exhibited on some *Tartanes* in which the distinguishing lateen is being discarded and a long sprit with fore-and-aft mainsail is being substituted. It is as though the fore part of the lateen were simply cut from the section aft the mast. Literally, this is probably what has been done. A much more workable rig has been found for her large jibs and gaff topsail by putting jaws on the remaining section of the yard and hoops on the mast, and leaving the sail loose footed. Should this development spread to the remaining *Tartanes* (as seems likely in view of its greater practicability), the Mediterranean will have given up a distinguished lateener.

Closely related to the *Tartane* is a vessel along this same coast called, for want of a better name, the simple Tuscan Coaster. (There seems to be no one particular local name.) Having been less affected by circumstance and being owned by poorer people in more obscure ports, the Tuscan Coaster retains many more features of the past. Smaller than the *Tartane,* she carries the typical large lateen mainsail and one large jib. (Plate 7.) Her mast is stepped slightly aft of the midship line and rakes sharply forward; a characteristic older than the lateen itself, being very much in evidence as early as the ninth century. This heavy mast is constructed and supported in the ancient fashion, carrying sheaves fitted in the mast-head for the halyards. This is the ancient calcet (see Fig. 6). There is little

standing rigging, the only stays being single running shrouds or backstays on each side to support the mast with the usually heavy running purchase to set taut. The jib-boom is a long light spar that can easily be run in and out through a hole in the bulwark to starboard of the stem and just below the gunwale. When rigged it is exactly horizontal and, with the large jib sheeted home, gives the appearance of a well-balanced rig. The jib and jib-boom, however, are the only details to mar the unquestionable antiquity of this boat. The prolonged stem is capped by the ancient crescent piece. The hull is round and full but with finely proportioned lines. One large main hatch is forward of the mast while a companionway aft with a slightly raised deck provides an ample platform for the man at the tiller. Her decks are wide and free for the usual amount of deck cargo which is beyond the capacity of the hold.

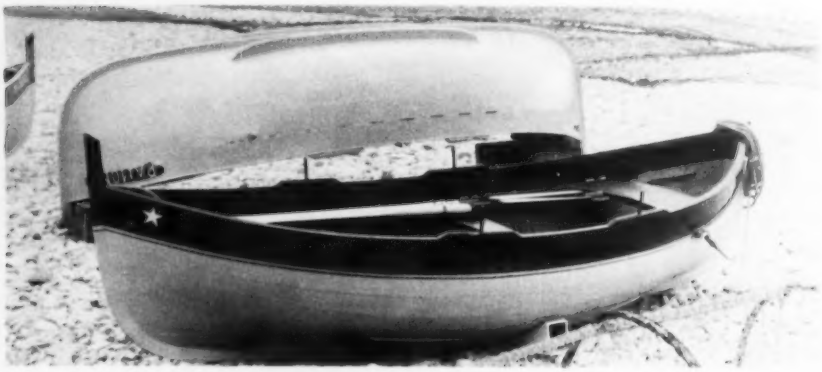
A boat which bears a close resemblance to this Tuscan Coaster is the *Sandale*, found about the Barbary coast. The two craft are so nearly identical that, in my opinion, they are undoubtedly the same boat called by different names. Such changes of name are not rare in craft of this size and sometimes cause confusion. In this particular case the *Sandale* (now almost extinct) is native to Tunis.[5] The Tuscan boat, on the other hand, seems to stay close to the Gulf of Genoa. It is entirely possible that the French and Italian traders might have transplanted such a favored craft to the Tunisian coast sometime during the past century, there being little evidence of its earlier existence there.

To return to the Gulf of Genoa and our Tuscan Coaster, it might be well to picture the boat as it exists at present. The Tuscan Coaster is now extremely rare and those in use do not indicate that they provide their owners with more than meagre existence. Lacking paint of any kind they might arouse an erroneous impression of lack of upkeep. On the contrary, the one I inspected, on closer range, evidenced great care in upkeep both in hull and cordage. The rigging was mostly new; the sail, while patched, showed no holes nor signs of deterioration. The hull was well caulked, dry and sound. Her age might have been well over half a century but there were many years of service remaining. Despite the weathered appearance, on close view this boat presents a pleasing picture with her colored, stained and patched sails against a hazy background of blue sea and Corsican mountains.

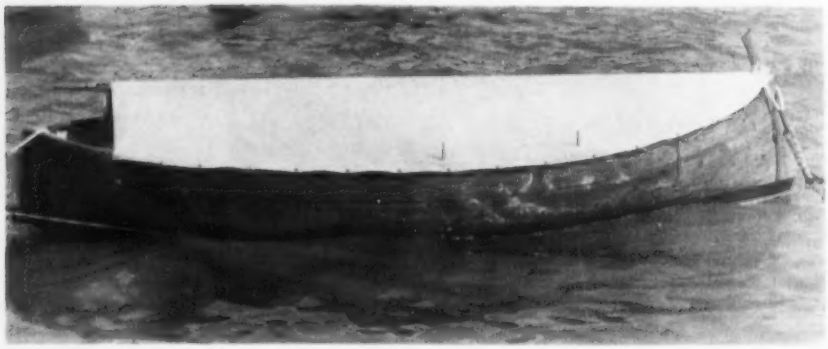
[5] It is stated by P. A. Hennique, *Les Caboteurs et Pêcheurs de la Côte de Tunisie* (Paris, 1888), pp. 15-17, Pl. X, XI, XII, XIII, that the *Sandale* is native to the island of Djerbah, Tunis, found in 'countries of the Levant and Barbarie' and employed as a cargo carrier. It is significant that in the total of 850 craft of various types and localities observed on the Tunisian coast in 1882 no *Sandale* was present. It is possible to conclude from this that the type was not common at even that recent date.

Tuscan Coaster, Gulf of Genoa and Corsica

Three types of small beach craft of Provençal Coast



Small beach craft of French and Italian Riviera,
used to tend nets and bait traps



Genoese harbor and beach boat

Note inboard rake of stem- and stern-post

We cannot leave this corner of the Mediterranean without a study of its most unusual type. The Italian *Navicello* or *Balancelle* is the Mediterranean counterpart of the Portuguese *Moleta*. Similar in appearance this happily unorthodox pair are in no way related. While the *Moleta* combines her haphazard arrangement of mast and sail in the same general peculiar fashion, the handiwork of generations of sailors all adding bit

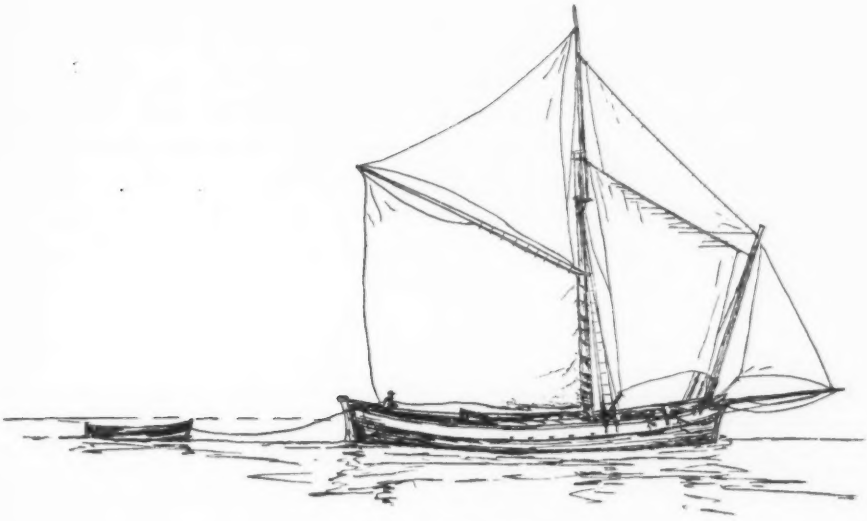


Fig. 14. *Navicello*

by bit has resulted in the present combination of ideas. The *Navicello* (Fig. 14), however, is the existing modification of the same craft that sailed along the Tuscan coast when Michelangelo was painting the Sistine Chapel and it can trace its origin back into dim ages of history. In the early days of the lateen rig when trade was again starting to flourish up and down the Mediterranean, the call for larger ships was met and in the place of one mast came two and three and even four, each with a lateen sail. The sail itself reached its loft in the length of the great yards. The smallest of these vessels were mostly of two masts and did not venture far a-sea. They were similar to those of the French and Spanish coast and developed much along the same lines. Their natural backwardness led however to individualities. The trend along the coast of Tuscany was guided much by the feudal system and political conditions, and since these boats were the heritage of the poor, there was little progress, and the *Navicello* remained unchanged, except for minor points, until today. (Fig. 15 rep-

resents a *Navicello* of the middle of the eighteenth century.[6]) Her foremast or *trianchitto* is stepped far up in the bow, raking forward at an angle of about seventy degrees. The lateen sail on the foremast disappeared sometime during the eighteenth century and in its place is a staysail be-

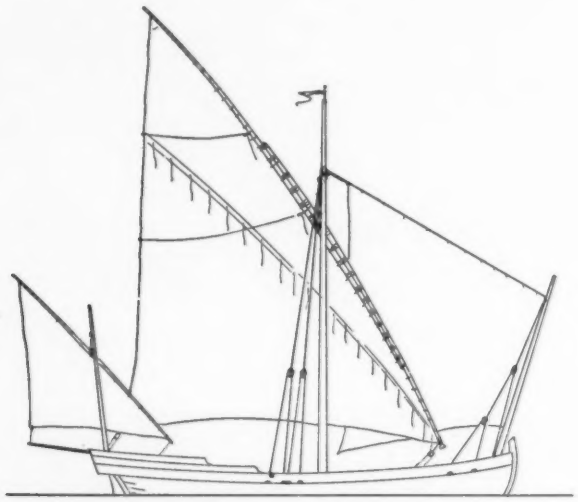


Fig. 15. *Navicello* 1768, from contemporary sketch published in *Mariner's Mirror,* V (1919), 26

tween the fore and main. The lateen on the main is also gone although it was fairly common about three-quarters of a century ago. The inclination is strong to believe that this same change is taking place on the *Tartane.* The long lateen yard became unwieldy with topmast, topsail and staysail so it is now, instead, a long sprit. This sprit or half sprit, as it is best called, results in a peculiar sail on the *Navicello.* The sail is loose footed and hooped to the mast in the conventional manner but bent to the sprit by lashings out to about two-thirds of its length, the peak being sheeted to the end through a sheave (Fig. 16). This long sprit and a lofty topmast result in a very large topsail. A large jib or forestay-sail fills the space between the bowsprit and fore-

Fig. 16. Gaff or sprit of a *Navicello*

[6] The sketch from which Figure 15 was drawn was taken from a sketch book of an unknown artist and dated 1768 at Messina, Sicily. It was published among others of the original sketches in the *Mariner's Mirror,* V, 26.

mast very adequately and, in addition, a staysail is often rigged from the main-topmast, the whole consequently falling into the modern classification of a staysail rig. Such a rig, known among racing yachtsmen as a trim and effective one, is apt to give, on this craft, the impression of washing hanging out. Today it may seem so radically different from the same craft of the sixteenth and seventeenth centuries that the casual observer can find no similarity. The vessel is certainly no longer lateen rigged; the projection or platform over the stern has gone and the beak-head has disappeared. As in the *Tartane* of today the stem projection and crescent cap have been cut away. But these changes detract none from the boat's antiquity. She stands today as though her lateen yards had merely been temporarily dropped, and they could certainly be hoisted again with no change in the rigging by the arrangement of halyards. The hulls, although stripped of a few typical outward features, take the same age-old form. Having a full round body tapering off sharply at each end to the same stem- and stern-posts, these hulls are similar in size and appearance to their ancient ancestors.

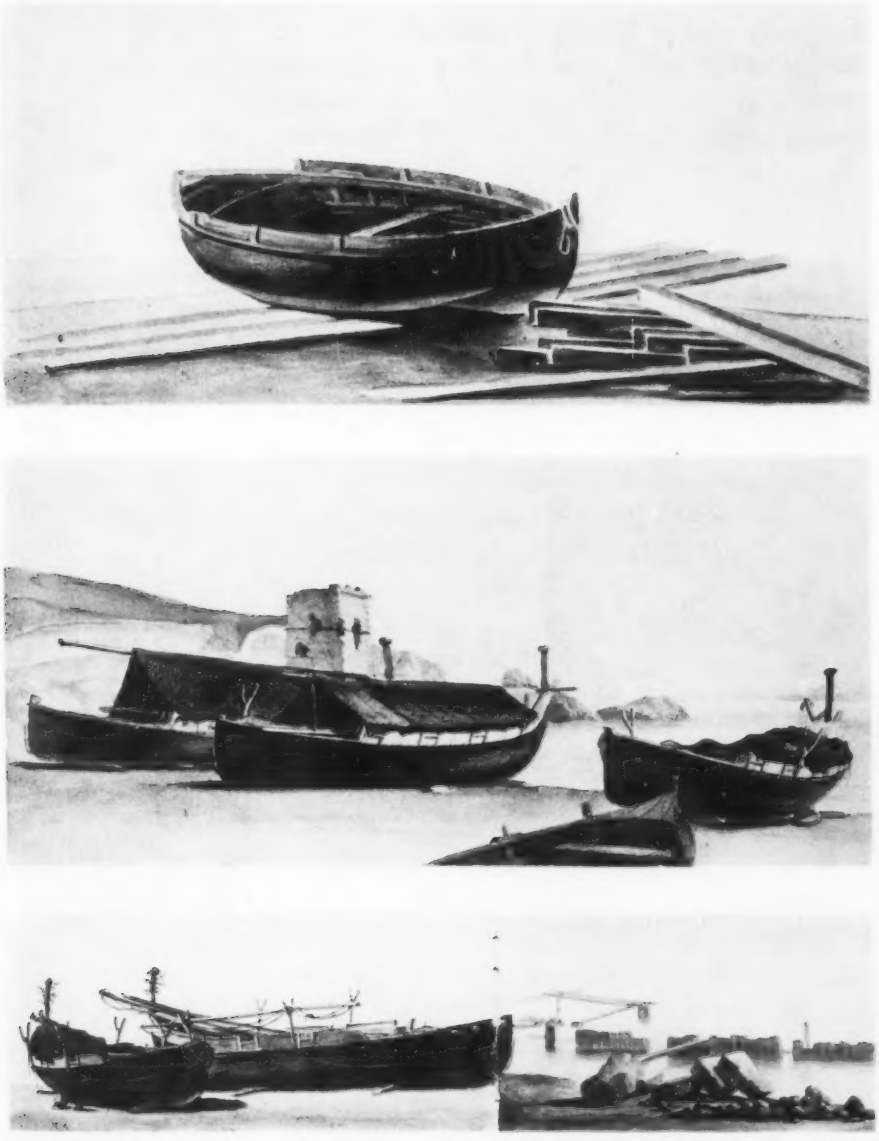
We cannot leave this section of the Mediterranean without also investigating the small harbor and beach boats — the boats which are so common along the shores from Marseille to Genoa and which never fail to impress a visitor to the Riviera. The proper name for these boats seems to be very elusive. Any number of names might be applicable depending on the local usage. One authority has referred to them as *barquettes* and this name seems perfectly suited, except that upon questioning a great number of fishermen and owners of the craft none could be found who had ever heard of a *barquette*. Perhaps this term is an old one and has been dropped along with some of the old features of the boat itself.

Where literally hundreds of these boats are drawn up on the beach there seem to be as many different kinds. The sizes, forms and colors may vary considerably. There are, however, only three basic types (Plate 8a) of design and construction (barring of course amateur efforts and such singular craft as a 'Marseille dory,' or the 'plat-dit-bette'). These three types have their individual backgrounds and in many cases show some ancient features more distinctly than the larger craft. Because they have no identifying rig, the distinctions are not immediately apparent. Two of the three classes comprise comparatively large and heavy boats, requiring six or eight men to launch or haul out on the beach, while the third class consists of small cockle shells (Plate 8b). It is probably not very apparent why any space should be devoted to such an insignificant peapod as is embodied in this latter type, which seems overcrowded with more

than two people embarked. But the craft cannot be disregarded when its abundance persistently forces attention to its charm. It is finely constructed with a full sweet run and body as graceful as a pilot schooner. The form is not similar however, being more like the melon seed design, but not for an instant suggesting anything but lightness and grace. The seat on the water, even in a rugged seaway, gives one the same impression of stability as that of a sea-gull riding the waves. The projecting stem is rather short compared to other beach boats, being only some eight to twelve inches above the gunwales. There is no cap on the stem but it is cut in a definite crescent. The hulls are smoothly caulked and finished with the greatest of care outside and in. Some examples would rival the workmanship on a piece of fine furniture. As is the universal custom in the Mediterranean on both large and small craft, a beading or wale is applied outside at about the deck line or thwart level. It forms the dividing line for contrasting colors. This little beach craft never fails to carry its owner's distinctive (or identifying) mark on the bow and adds to all the other evidence the impression of being very dear to his heart.

Lightness, as opposed to heavy rugged construction, is the outstanding difference between the remaining two types. The heavy kind is the more typical, and is inclined to be found in larger and larger sizes until it becomes a Tuscan Coaster of some forty feet in length. Here on the Provençal coast it seldom exceeds eighteen or twenty feet and is essentially a beach boat. The lighter built boat is in contrast a boat full of curves. Rounder bilges, a bolder sheer, a taller and slimmer curving stem-post, an inward raking stern-post and even a rocker keel distinguish her from her rugged but more serviceable sister boat. She is in no way inferior, however, and of all the small beach boats is much the oldest in type, being undoubtedly fashioned after the very early *Tartanes* and *Chebecs* of this coast. It is in this type boat that upon rare occasions is found the old false stem or beak exactly as it was in larger boats such as the *Tartanes* and *Chebecs* two and three centuries ago. Plate 9 affords an excellent impression of these same beach boats of well over one hundred years ago as seen by Antoine Roux.

These three boats constitute in general all of the smaller harbor and beach craft of the old Provençal coast. One of the three is usually more predominant, depending upon the exact locality and on the services required. Many of them are driven by small one- or two-cylinder gas engines. However little of their charm is lost by this. In the vicinity of Genoa a slight variation may be noticed in these craft. They are essentially of the latter type described except for the stem- and stern-post. Both



French beach boats of 1823 [cf. Plate 8]

From sketch book No. 40 of Antoine Roux, 1823, pages 14, 4, 12, in Peabody Museum of Salem

Trabacolas of 1816

From a sketch book of Antoine Roux, 1816, page 18, in Peabody Museum of Salem

curve sharply inboard, reminding one much of our American canoe in that respect (Plate 8c).

Downward along the coast of Italy these small craft lose considerable of their distinction, becoming nondescript in construction and appearance. When we come to the small fishing villages on the beautiful stretch of coast between Naples and Sicily we find them again, however, similar

Fig. 17. Fishing and harbor boat, Palermo, Sicily

to the French boats, gayly painted and using small lateen sails. These boats distinguish themselves by their retention of the ancient custom of painting eyes on the bows.

In Sicily however we find a small boat entirely different from any of these boats of the Italian or French coast. Sicily, still proud of the Norman influence, displays many strange combinations of Northern and Southern traditions and it is not unlikely that this influence has affected her style of harbor and fishing craft.

The harbor boats are rugged and heavily built, with little paint or color (Fig. 17). They are of fine trim lines however and it is readily apparent that they are born of many generations of good sailors. Their stem- and stern-posts both extend high above the hull and are of far stouter stuff

than is common elsewhere. They all carry a heavy projecting gunwale that adds to the appearance of strength and durability.

In design and construction these boats are unquestionable cousins of the boats of Malta to be described later. This is not surprising in that Malta and Sicily are of the same general location in the middle basin of the Mediterranean. It is interesting in this connection though to note that other craft in this vicinity on the Tunisian coast show none of the characteristics of Malta or Sicily but are more often of French or northern Italian type. It would seem then that the Sicilian and Maltese craft are of an older strain, although the ancestry is impossible to trace because of the complex historical background and racial changes.

It is regrettable in considering the larger craft of Sicily that the old *Shiffazo* and *Paranzello* are no longer in evidence. Nor are there any craft in general use that bear signs of direct relationship. A large lateener seen about the vicinity of Palermo is identical in hull to the small boats of the harbor. With the addition of the sailing rig, the similarity to Maltese craft is even further apparent. The lofty rudder with tiller to clear the high projecting stern-post is the most notable of these similarities. The pure lateen rig with plum mast is in contrast to the lug and sprit rigs of Malta however. This lateener ranges in length between thirty and forty feet, is used chiefly in and about the harbor of Palermo although it is sometimes found along the coasts in the fishing industry. Her rig is most notable in that it is a type of lateen described by some authorities as a settee. Although this term evokes considerable controversy, the sail of this type still remains the link of relationship between the lug and lateen. Though more lateen than lug, the forward end continues downward from the yard a few feet, making a lower foot to be sheeted forward. The remainder of the rig is in the ancient manner of lateens with running shrouds, parallel yard and halyard through sheeve in masthead. The whole is unaffected by any modern trend.

The foregoing descriptions hold only for harbor craft, chiefly in the vicinity of Palermo. Their outward appearance is strikingly different from that of the coastal fishing craft. The harbor boats are as dull with lack of paint as the coast boats are flashing with decoration and bright coloring. In the latter, historic and legendary scenes are often found progressing along the gunwales; from eyes in the bow to fish-tails at the stern these vessels probably are distinctive in being the most lavishly decorated of all Mediterranean types. For all their colorful display, their seaworthiness is nonetheless outstanding. They are similar in construction, though often longer and of finer proportions than their harbor cousins.

The rig is similar in the larger boats, being single lateen of rather low cut. When not sailing these boats are often seen under oars with as many as eight fishermen pulling. With the exception of isolated cases they are devoid of mechanical propulsion.

A discussion of Sicilian craft is hardly adequate without briefly mentioning its most numerous examples which, while not typical of Sicily or even the Mediterranean, are nevertheless native to present-day Sicily. The coast-wise brig is seen frequently in all parts of the Mediterranean but nowhere does the type flourish as it does under Sicilian ownership. An approach to the Sicilian coast is rarely made without falling in with two or three of these moderate-sized square-riggers. The rig differs mainly from our western conception of the brig in that the masts each consist of a single pole or 'pible'; such as was found in Turkish, French and Italian craft of a century ago. Tillers are used in place of wheels and color on the hull is used more extensively. Otherwise the craft is an ordinary brig used to haul many and varied cargoes about Sicily and other Mediterranean ports. It has no relationship to the true Mediterranean types and is merely mentioned to note its presence there.

[The concluding section of the article will appear in the January 1942 issue of THE AMERICAN NEPTUNE.]

The First Use of the Sail by the Indians of the Northwest Coast

BY F. W. HOWAY

MANY persons who have read Captain Cook's account of his second and third voyages must have noticed that the illustrations depicting water scenes in New Zealand and throughout Polynesia frequently show the natives in canoes equipped with masts and sails whilst those relating to the Northwest Coast invariably represent the canoes as being propelled solely by the paddle.

In Captain Cook's narrative of the discovery of Nootka Sound on the Northwest Coast of America in March 1778 the explanation appears. After describing the natives' canoes, many of which were 40 feet long, 7 feet broad, and 3 feet deep, he deals with their paddles, and then remarks that these Indians 'have acquired great dexterity in managing those paddles by constant use, for sails are no part of their art of navigation.'[1] Trevenen in his manuscript notes on Cook's last voyage says that the size of the canoes was due to the great diameters of the trees from which they were hewed. He did not know that the Indians of the Northwest Coast had learned how to increase the original width by the use of fire and hot water. Burney in his manuscript journal merely mentions the canoes as resembling Norway yawls, but notes that they had no outriggers like those of Polynesia. He remarks upon 'the most excellent time' the Indians kept in paddling them. Ledyard speaks of 'the boats' of the natives and their 'fishing geer.' He notices 'a harpoon made from a mushel shell only, and yet they have so disposed of it as to subdue the great leviathan, and tow the unwieldy monster to their shores.'[2]

Ellis, Rickman, and Zimmermann, the other journalists of Cook's last voyage, in speaking of the canoes in motion always mention the paddles, sometimes with words of praise of their shape or the skill of the natives in using them. Thus the negative evidence supports Captain Cook's posi-

[1] James Cook, *Voyage to the Pacific Ocean* (Third Voyage) (London, 1784), II, 328.
[2] John Ledyard, *Journal of Captain Cook's Last Voyage* (Hartford, 1783), pp. 76ff.

tive statement that these people knew nothing about sails, and used only paddles as the means of propulsion of their canoes.

It is exceedingly strange that men who were accustomed to go twenty and thirty miles out to sea in search of whales, and must therefore have felt, many times, the power of the wind to aid or impede their progress, should never have thought of or devised something against which that force when favourable could act. Other aborigines no further advanced towards civilization had found, or evolved, the sail. Sir Alexander Mackenzie, in July 1789, when near the mouth of the Mackenzie River met hostile Indians. He explains:

> When they first perceived our sail, they took us for the Esquimaux Indians who employ a sail in their canoes.[3]

Franz Boas asserts: 'It seems that the Northwest Coast Indians had sails before the advent of the whites.'[4] He cites no authority for the statement, and it is believed that none can be found. A well-known ethnologist, Professor Charles Hill-Tout, a resident of British Columbia for over fifty years and a close student of Indian life during all that time, takes a different view. Speaking of the coast Indians he says:

> All the canoes of this region are propelled by means of paddles and sails, though it is doubtful if the latter were used in pre-trading days.[5]

Leaving these modern writers we shall see what the early records disclose. The Indians of Nootka Sound, though they had seen Captain Cook's ships moving under sail did not immediately adopt that most useful contrivance for saving labour, though they had, right at their hand, the material for masts, sails, and cordage. Eight years after Cook's departure James Strange, one of the early maritime traders, spent three weeks (in July 1786) at Nootka, yet he does not mention seeing any means of propulsion of their canoes except paddles.[6] This is merely negative evidence and therefore comparatively valueless. Not until John Meares arrived there in 1788 do we find any positive statement in support of Captain Cook's words already quoted. Ten years had elapsed since the Great Captain anchored in Nootka Sound. In that interval the Indians had seen about eight vessels of various rigs: sloop, schooner, brigs, and

[3] Mackenzie, *Voyages* (London, 1801), p. 79.

[4] Franz Boas, *The Kwakiutl of Vancouver Island: Jesup North Pacific Expedition* (New York, 1908), p. 446.

[5] *British North America: The Far West, the Home of the Salish and Déné* (London, 1907), p. 138.

[6] James Strange, *Journal and Narrative of a Voyage to the Northwest Coast* (Madras, 1928), pp. 20-28.

ships (besides, of course, their long-boats and jolly-boats) moving under sail. Meares says, under date of September 1788:

> After we had been some time in King Georges' [Nootka] Sound the natives began to make use of sails made of mats, in imitation of ours. We had, indeed, rigged up one of Hanna's [a chief who lived at the entrance of Clayoquot Sound, about thirty miles away] canoes for him, with a pendant etc., etc., of which he was proud beyond measure: and he never approached the ship but he hoisted his pendant, to the very great diversion of our seamen.[7]

Evidently the Indians now began to use their own cedar mats for sails; the remainder of the quotation is a trifle ambiguous, but it seems to mean that Meares equipped Hanna's canoe with sail and a pennant, and that the chief would come proudly sailing up to the *Felice,* pennant flying. In general but little reliance can be placed on Meares's statements, but in this instance he appears to be truthful, for Captain James Colnett who was at Nootka for a month — 6 July to 6 August 1788 — does not mention in his manuscript journal any sails then being used by the Indians. For some unknown reason the sail did not quickly become popular: perhaps conservatism is inborn in the human race; in May 1789, Don Estéban Martinez encountered about fifteen miles off shore many canoes going to the halibut fishing grounds but he does not mention seeing one of them under sail.[8]

Captain James Colnett in December 1790 writes that the Indians at Clayoquot brought to his ship, the *Argonaut,* presents of various kinds and that

> In return for this attention the Chief [Wickananish] having attempted to rig and sail two canoes after the manner of our boats I caus'd their Sails to be properly made and a Rudder for the Chief's Boat.[9]

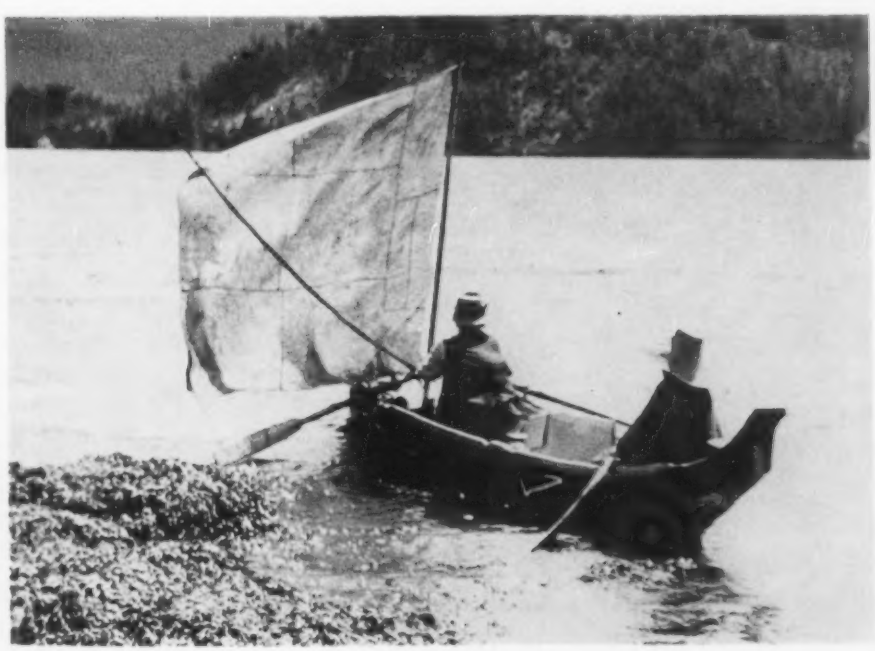
The knowledge and use of the sail thus appears to have taken two years to spread from Nootka to Clayoquot, the neighbouring sound to the southeastward, a distance of about thirty miles as the crow flies; and even then it seems from this quotation to have been a novelty with whose management the natives were not familiar. Now for the first time we find the Indians anxious to acquire the white man's sails which become a means of barter. Malaspina records that Tlupananuc, a Chief of Nootka Sound, visited him on the *Descubierta* on 20 August 1791, and that in return for his presents (the favourite Indian method of barter) he asked for

[7] Meares, *Voyages* (London, 1790), Chap. XXIV, p. 264.

[8] Estéban José Martinez, manuscript diary under date 23 May 1789.

[9] F. W. Howay, ed., *The Colnett Journal* (Toronto: Champlain Society, 1940).

Indian woman of Quatsino Sound, west coast of Vancouver Island, in a canoe with spritsail, *circa* 1890

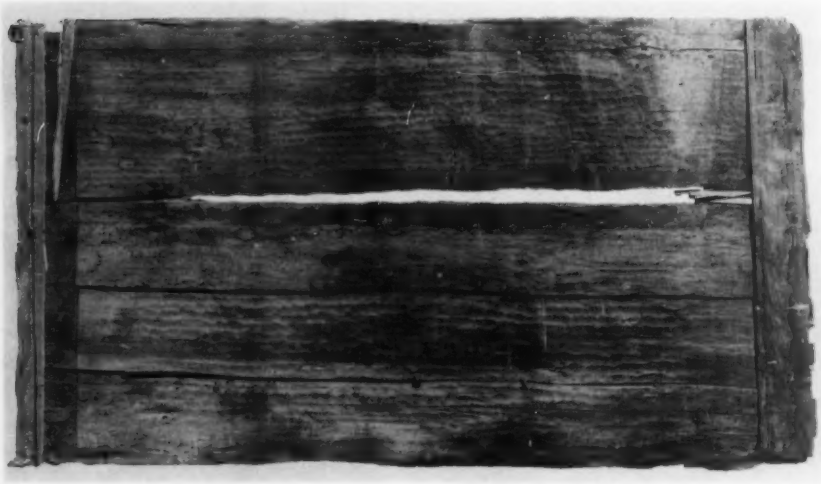


Indian man and woman of Quatsino Sound, in a canoe equipped with spritsail made of old flour sacks, *circa* 1890

Reproduced from photographs by B. W. Leeson, Vancouver, B. C.

Indians in canoe equipped with two gaff-headed sails, wing-and-wing, *circa* 1890, in the Strait of Fuca

Reproduced by kindness of W. A. Newcombe, Victoria, B. C.



Wooden sail from Alert Bay, British Columbia, *circa* 1913

Provincial Museum, Victoria, British Columbia

'the sail of a boat which he desired eagerly and intended for his canoes.' [10] And on the twenty-seventh Maquinna, the head Chief of the Sound, arrived, 'an importunate and insatiable beggar' as Roquefeuil describes him, and begged 'two sails for canoes' and pieces of blue cloth, copper, and some hardware.[10] These are the first recorded instances of any desire of the Indians for the white man's sails. Perhaps they show that they had found their cedar mats unsatisfactory for the purpose. The incidents are contemporary with Captain John Kendrick's purchases of land in Nootka Sound and vicinity, in which sails figure prominently as a part of the consideration. Thus, on 5 August 1791, when Kendrick made his first purchase at Esperanza Inlet which lies immediately to the northwestward of Nootka, he gave in exchange 'six muskets, a boat's sail, a quantity of powder and an American flag.' The same day he obtained from the Chiefs at another part of Esperanza Inlet a piece of land for 'two muskets, a boat's sail, and a quantity of powder.' Two days later he made his third land purchase; this was at Clayoquot Sound. The consideration was 'four muskets, a large sail, and a quantity of powder.' It thus appears that sails were taking a place with arms and ammunition, which were always in demand.

The next appearance of the sail is at the Strait of Juan de Fuca; but it is only a fleeting visit. John Hoskins, the clerk of the Boston ship, *Columbia*, mentions that in June 1791, while that vessel was at Tatoosh Island, near Cape Flattery, Tootiscosettle, a brother of Wickananish, the head Chief of Clayoquot Sound, some fifty miles to the northward, arrived from that Sound 'in a large canoe with four masts.' [11] We can imagine the pride with which Tooticosettle brought his sailing canoe across the Straits to his neighbours. The installing of four masts argues some originality in this man: he had seen sloops, brigs, schooners, and full-rigged ships, but nothing with four masts. For that matter no four-masted trading vessel was on the coast during the whole time of the maritime fur-trade.

No reference to the use of sails by the Indians has been found in Quadria's manuscript journal, 1792, or in Vancouver's *Voyage* or in Menzies' *Journal*, or in the manuscript journals of Bell or Manby. All of these cover Nootka Sound in the year 1792; and yet by that time the sail had become an integral part of the art of navigation of the Indians on the west coast of Vancouver Island, as appears from the manuscript log of the *Hope*. In July 1792, that Boston brigantine, under the command of Joseph Ingraham, was sailing along the west coast of Vancouver Island, south-

[10] Malaspina, *La Vuelta al Mundo* (Madrid, 1885), pp. 192, 194 (translation).

[11] John Hoskins, *Narrative*, 29 June 1791. This manuscript is about to be published by the Massachusetts Historical Society.

erly, near Nootka Sound and about six leagues off the shore. Ingraham says in his journal:

> In the course of the day we passed a vast number of canoes, every one with a sail, which was a new thing to me, as I never saw them make use of any in this part before.[12]

The latter part of the quotation is important. Ingraham had been on the Boston ship *Columbia* at Nootka Sound for ten months from September 1788 till July 1789. He returned in the *Hope* in June 1791, but had not visited Nootka Sound and was at this time *en route* there from Queen Charlotte Islands. Quite naturally as he had not seen the Indians of that neighbourhood using sails at all on his first visit (1788-1789) he was surprised to find canoes equipped with them on his second visit (1792).

At any rate by 1803 the sail had become a part of the equipment of Indian canoes in Nootka and the near-by sounds. Jewitt, the captive of Nootka, states in his journal that when Maquinna knew that Thompson, the sail-maker, had survived the massacre of the crew of the *Boston*

> The Chief expressed great satisfaction in his being saved, saying he would be very useful to make sails for his canoe.[13]

The journal contains frequent entries showing Thompson 'making a sail for our chief's canoe' or 'making sails for canoes.' And in his *Narrative*, speaking of the natives of Clayoquot Sound, he says:

> Their canoes are wrought with much greater skill; they are equipped with sails as well as paddles, and with the advantage of a fair breeze are usually but twenty-four hours on their passage [from Clayoquot to Nootka].[14]

Lewis and Clark reached the mouth of the Columbia River in November 1805 and remained there until March 1806. Though they made careful note of all they saw, especially those things connected with Indian life, including the canoes and paddles, they do not mention the use of any sail by these natives. It would appear from this negative evidence that the sail had not reached that far southward, and notwithstanding the fact that trading vessels had frequently been in the river and had even wintered there, the Chinooks had not copied this labour-saving device.

The sail appears to have made equally slow progress from Nootka northward, for in September 1818 Roquefeuil, in the *Bourdelais*, who had come from Queen Charlotte Islands, was met off the entrance to Nootka Sound by 'une pirogue à la voile.' [a canoe under sail].[15] In dealing with

[12] Joseph Ingraham's manuscript journal of the *Hope*, 30 July 1792.

[13] John Jewitt, *Journal* (Boston, 1807), pp. 5, 7, 23, 37, 46.

[14] John Jewitt, *Narrative*, Brown ed. (London, 1896), p. 77.

[15] Camille de Roquefeuil, *Voyage autour du Monde* (Paris, 1843), II, 171; (London, 1823), p. 99.

the incidents of his voyage in southern Alaska and Queen Charlotte Islands he frequently refers to the arrival of Indians in canoes, but this is the first time he speaks of a canoe under sail, as though that were a novel sight to him.

It is not proposed to follow the subject further, but to conclude with a quotation from the Report of the National Museum of the United States for 1888. Speaking of the coast Indians of southern Alaska and northern British Columbia it says:

Canoe outfit — This consists of masts, sails, paddles, bailers, and mats. Ballast of stone is sometimes, though rarely, carried. The masts and sails have been added since the advent of the whites, the rig being a sprit-sail, and the number of masts varying from one to three. Masts and sprits are of light cedar wood, and sails, originally of mats are now invariably of white cotton sheeting.[16]

Lest it be thought that the Indians were entirely lacking in initiative attention must be called to their use of a strange material in the manufacture of sails: a wooden sail. The natives living near the narrow, canal-like inlets evolved, but when is not known, a strange contrivance — a sail made of wood. One of these wooden sails is preserved in the Provincial Museum of British Columbia. It is similar to that shown to me more than thirty years ago by George Hunt at Fort Rupert. It is made of about eight boards split from the cedar tree, and well adzed. These boards are about three-quarters of an inch thick, about nine feet long and eighteen inches wide, rabbitted on each edge to fit the next piece, like the clapboarding on a house. Through the two rabbitted edges holes are drilled so that the pieces may be sewed together with cord of twisted cedar bark. The eight boards when thus combined form a square of about nine feet. This is strengthened by light narrow boards sewed to the outside edges. When in use the whole contraption is raised and resembles an immense board, resting against the mast — a wooden sail. Manifestly such a contrivance could be used only with a following wind; but it blows either up or down in those narrow inlets bordered on each side by lofty mountains.

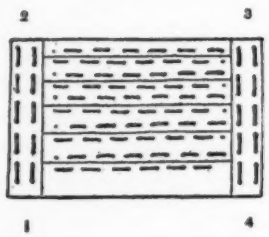
APPENDIX

Account of the wooden sail and its manufacture, reprinted from Franz Boas, 'Ethnology of the Kwakiutl,' *Thirty-fifth Annual Report of the Bureau of American Ethnology, 1913-1914*, I, 97-100.

Now I will talk about the sail of the ancient people, which was sewed together of boards. First they look for a thick moss-covered cedar-tree that has been lying on the ground for a long time. When it has been found, one and a half fathom-lengths are

[16] Albert P. Niblack, *The Coast Indians of southern Alaska and northern British Columbia*, p. 296.

split off. Each piece is two spans wide and one finger-width thick. I do not know how the edges are fitted together. They are well adzed. . . . Then he takes a long bone drill, and he takes two pieces of the boards and lays them side by side. He drills near the end in a slanting direction through the edges of the two split boards, so that the point of the drill comes through on the other side of the board, in this manner. . . . When this is done, he takes another (board) and places it alongside of the last one, and he drills it in the same way, and sews it together as he sewed the first one; and he only stops adding to it when it is two fathoms wide. Then he takes a split board half a finger-width thick and four finger-widths wide. Its length is equal to the width of the boards that have been sewed together. He places it on top of one end of the sewed boards. He takes his drill and drills through it one finger-width from the edge of the piece of wood that forms now the straight crosspiece of the short boards that have been sewed together. He drills straight through, and at a distance of three finger-widths from the first hole he drills through again; and then he drills other holes at the same distances. The drilling continues over the whole length of the cross end-piece. He also cuts grooves into it; and after the grooves have been cut between alternating pairs of drill-holes, he turns the sewed boards over and cuts grooves on the opposite side, over those (intervals) in which he did not cut grooves (on the other side). After he finishes, he turns it over. Then he takes twisted cedar-withes and sews them together in the way in which he sewed the short boards. As soon as he has



finished doing this at (1), he drills at (2), and he does the same as he did at (1); and after he has done it, he puts the crosspiece at the other end, and he drills it at (3), and he does the same as he did at (1) and (2); and finally he does it at (4); and when he reaches the end, he has finished. Now, that is the sail of the ancient people before any white people came; to wit, short boards sewed together. The canoe-mast is short, for it just shows above the top edge of the board sail when it is standing up in the bow. They just push up one end, for the lower edge lies hard against the mast when it is standing. The wind just blows against it and presses the board sail against the mast when the canoe is running before the wind. When it gets calm, they lay it down flat towards the stern, away from the mast; and the middle of the board sail lies against the mast as it is standing on edge. After they have taken it down, they take down the mast and put it down into the bow; and they push up the board sail and shift it towards the bow, so that it lies flat in the bow of the canoe. The sail of a large traveling-canoe is of this size.

Materials of Maritime Interest in the New York Public Library

BY KARL BROWN

A FEW years ago, the public libraries of New York City came in for some embarrassing attention because an enterprising newspaper reporter discovered that nowhere could he find an up-to-date globe of the world for public use. The New York Public Library could produce, among others, the magnificent Hunt-Stevens-Lenox gem, a hollow copper miniature of the known world of about 1510, so early that it had neither parallels nor meridians and showed no evidence of knowledge gained from Magellan's voyages, but of late globes the Library had none, a situation soon remedied. The moral of this is, of course, that the commonplace is somehow occasionally overlooked, even with everybody watching.

However, in the realm of maritime literature, the shelves show, and long have shown, a goodly company of both old and new publications, together with manuscripts and pictorial materials. There are worlds of books—books, from the first one entirely devoted to navigation, Medina's *Arte de Nauegar*, 1545, to the latest Bowditch; books whose principal claim to fame is their association with the sea, as the Bible carried on the *Bounty* and used later on Pitcairn Island, the Book (one unconsciously uses the capital B) which served so long as a guide, both spiritual and temporal, of this famous colony. And, of course, there are the everyday books of every sort, from marine engineering to sea serpents.

If one were to ask at the busy Information Desk, surrounded by some 6,000,000 cards in the Library's Public Catalogue on the third floor, for 'books of maritime interest,' he would probably be countered with the question as to just what phase of the subject he wished to cover. If he said he wanted Diego Garcia de Palacio's *Instrvcion Navthica*, published at Mexico City in 1587, the earliest work on navigation and shipbuilding printed in the New World, he would be directed to the Reserve Room, on the same floor. If coastal surveys and marine maps were his interest, he would be sent to the Map Room; if prints, to the Print Room;

or, if he sought one of the original daily logs of old sea-dogs, he would go to the Manuscript Division — all on the third floor. If he wanted general works on navigation, mariners' guides, or similar material, he would get them in the Main Reading Room from the great main stack of the Library, a repository of over 1,500,000 volumes on subjects not covered by special reference divisions. If he wanted to study marine engineering, shipbuilding, or some other technological aspect, he would be referred to the Science and Technology Division, on the first floor.

It may be seen, because of this distribution, how difficult is a guess as to how many books the Library has in this field. It seems fair to say that there are some 9,000 volumes on Nautical Art and Science, and another 8,000 books and pamphlets on Naval History and Biography. These, however, are but two nuclei. It would be a conservative guess — and nothing but a guess — to set down at least 50,000 volumes in various parts of the building as of direct interest to the investigator, and easily twice that number if all possible ramifications are considered. For example, there are 'Public Documents' (publications of governments) in which is the rare British set of *Parliamentary Papers*, commencing in the year 1731 and amounting to hundreds of volumes of official reports, special studies, etc., a noticeable percentage of which are contemporary documents relating in some measure to Britain's navy and merchant marine over more than two centuries. Needless to say, the average research (as distinguished from ready-reference) question in a large library occasionally requires ample time for canvassing.

Possibly it will be well to dispose of two general groups of material at once.

First, as to periodicals. There are long files, generally complete, of the *Nautical Magazine*, from 1832; the *Naval Annual*, from 1886; the London *Naval Chronicle*, from 1799 to 1818; the *Revue Maritime*, from 1843; the *Revista Maritima Brazileira*, from 1898; the *Rivista Marittima* (Florence), from 1868; the *United States Naval Institute Proceedings*, from 1874, among others. Most countries are represented by their major publications as well as by many of a secondary nature.

A helpful feature of the Library's service is the filing of index-cards in its various catalogues for important historical, biographical, and bibliographical contributions in journals. Not only the marine, but general periodicals as well as those covering other special fields, and even the publications of academies and societies are inspected for articles of interest. Thus, J. S. Hicks' 'The Life of a Jack Tar,' in the old *Independent* for 1903; 'Das Schiff in der Kunst,' in *Norden* (Berlin), for 1937; and George

Francis Dow's 'The Sailing Ships of New England' in the *Bulletin* of the Society for the Preservation of New England Antiquities, for 1922, were uncovered in a random search for variety of representation. As periodicals are indexed as soon as they are received, the student has, in addition to printed bibliographies, an up-to-date subject-list in the Catalogue, not only of books but of the principal contents of important serial publications.

Government publications constitute another source for this subject. There are long files of coast pilots and similar mariners' guides, from nearly every country in the world having a maritime interest, covering coasts from the icy tip of Greenland to the stormy Tierra del Fuego. In addition to long files of routine reports, navy lists, etc., from navy departments, there are also reports and studies from hydrographic offices, lighthouse services, coast and geodetic surveys, coast guards.

Perhaps in our little visit through the Library, the logical place to start is in the Science and Technology Division; aside from this point, only casual mention will be made of locations. Among scientific subjects, here will be found materials on weather, ocean currents, etc.; among the technical, Marine and Naval Engineering and Marine Architecture.

Marine and Naval Engineering really constitute such a far-flung subject that, again, one asks for definition before estimating size. Possibly the best indication is the number of references in the Division's catalogue – at present, about five hundred, including both articles in periodicals and titles of books. Thorough investigation would not of course be satisfied with this one subject, but would follow through the more specialized topics, as Marine Engine, where one would find another three hundred references. The machinery of the catalogue – 'see also' references, in library jargon – might lead one to a dozen places before he had exhausted the resources.

Marine Architecture is a more closely knit subject. There are about 1,500 volumes bearing directly on it in the Library. By no means all, but a very satisfying number of early works are present.

Of the seventeenth century: Furtenbach, the early German architect and Italophile, wrote a number of 'Architecturas' which seem generally to have been respected, but his *Architectura Navalis* (Franckfurt, 1629) did not come off so well; all[1] seem agreed that no one could build a successful sailing ship according to his plans. Witsen's *Aeloude en Heden-*

[1] The writer happily admits to having leaned heavily on Dr. Wroth's *The Way of a Ship*, Maggs Brothers' *Bibliotheca Nautica*, and other essays and compilations noted at the end of this paper, for anecdotes and evaluations. However, in order to avoid the 'dreadful harness of footnotes,' acknowledgement without citation is made. As the essays are short, and the lists systematic, little trouble will be experienced in locating sources.

daegsche Scheeps-bouw en Bestier (Amsterdam, 1671) is one of the classics in the field. Apparently, the Library's copy is a first issue: Maggs says that there were three, the later ones omitting the 'Victorie der Hollanderen op en omtrent Chattam,' beginning on page 474. The cause of this omission is perhaps more interesting than the fact that there are issues; Maggs observes that this was probably due 'to a more friendly feeling [that] was afoot between England and Holland, possibly at the time of the marriage of William and Mary.' Anderson calls Cornelius van Yk's (or Ijk's) *De Nederlandsche Scheepsbouwkonst* (Amsterdam, 1697) 'a very good second to Witsen in importance,' adding that the work appeared in two variants of one edition, the difference lying in the dedication where Van Yk 'appears on second thoughts to have been anxious to conceal his knowledge of Witsen's second edition.' The Library's copy is second-issue. A French counterpart of the famous Dutch work is Dassié's *L'Architecture Navale* (Paris, 1677); it is a practical work, especially good for construction. Again, there were issues, one copy of the Library being the second of the undated edition.

Eighteenth-century works on naval architecture are also worthy of notice. Chapman's elephant folio *Architectura Navalis Mercatoria* (Stockholm, 1768), dubbed by Brunet 'Édition rare en France,' is probably the most famous work on the subject, and so practical that *Bibliotheca* says that 'any builder might construct vessels after them [the plans] in our days without any hesitation.'

In connection with this volume, there is a manuscript atlas of plates, probably a French work of the late eighteenth century, with legends in an English hand of the early nineteenth century.

The Library unfortunately does not have an almost equally famous English work, Sutherland's *The Ship Builders Assistant*, in the first, 1711, edition, but it does have the later — 1766 and 1784. Two other works of this century may be mentioned because they are the works of other than practical shipbuilders. One, the *Élemens d'Architecture Navale* (Paris, 1752) is by the Inspector General of the French navy, DuHamel. The other might be said to correspond in maritime literature to what biologists call a sport. The *Scientia Navalis* (St. Petersburg, 1749) is the work of that great and apparently indefatigable Swiss mathematician, Euler. *Bibliotheca* regrets that he had 'no practical knowledge either of shipbuilding or of navigation; if so, he might have carried the theory . . . to perfection. . . . For sound reasoning and facility of applying mathematics to all the problems that enter into the theory of the ship, this work stands without equal up to this day.'

Before leaving the Science and Technology Division, we should perhaps glance at the catalogue in which we should find some six hundred references on Docks and Wharves; five hundred on Lighthouses; and about 2,600 on Harbors. These cover both descriptive and technical phases of the subjects. In all cases, the bulk of the writings is of the nineteenth and twentieth centuries, though there are some earlier works, as Smeaton's *A Narrative of the Building of the Eddystone Lighthouse* (London, 1791), a true memorial to a magnificent engineering achievement of the period.

No collection of books can answer all the questions put to it. The Library staff finds that the indexes and scrapbooks it makes furnish help in this as well as in other special fields. The following extract[2] is a graphic illustration:

> Last summer an enthusiastic young ship-model maker came to [Rochester, N. Y., Public] Library looking for a drawing of a certain old clipper ship. The ensuing hunt took us to every corner of the Library and covered the table with opened indexes and reference books — but no drawing. Our disappointed young visitor then asked if we could give him the name of the captain of the ship. When, after a thorough search, we again reported failure, he dejectedly departed.
>
> The incident was recalled to me some time later when I chanced to hear of two files in The New York Public Library which would probably have enabled us to fulfill both requests. One is a collection of some 15,000 cards indexing drawings and other material about ships, the other a 'ship captains file' of several thousand more cards. If we had only known of them before, we could have referred our visitor to them; he doubtless would have welcomed this information and it would, certainly, have made a happier end to his call.

The Library cannot guarantee satisfaction as to this particular clipper, but it could have put before the young model-maker the references to some clippers that he had found in the indexes.

In addition to its card indexes, the Technology Room has thousands of illustrations, including ships, etc., clipped from various sources. Other pictures of vessels fill fourteen large quarto scrapbooks, originally prepared by the Art Division for its artist clientele, now in the stacks. The Art Division at present maintains a scrapbook of ships in art and another called 'Ship Decoration' (interior decoration). The Print Room, while it does not exploit the subject-interest of prints in its collections, frequently shows an uncanny facility for producing the right picture.

Finally, there is the Picture Collection of the Circulation Department — almost a million pieces, which readers may borrow as they do books

[2] R. S. Alvarez, 'Needed! A Union List of Card Files,' *The Library Journal* (New York), LXIV (1940), 395-396.

for use at home. This collection (on the ground-floor of the Central Building) not only classifies its pictures but analyzes pictorial details in them; so if the borrower wants pirate ships or naval weapons or lookouts, he will find them.

As implied in the preceding extract, the Library is happy to answer questions from its special files, if it can. It has a photostat service, as well, so that copies of illustrations, etc., can be secured at small cost.

Mention was previously made of the number of volumes on Nautical Art and Science and Naval History and Biography – about 17,000 volumes. It may be assumed that the Library has the important nineteenth- and twentieth-century works of value in the fields, due in part to the purchase in 1931 of the Rear Admiral Franklin Hanford library, of which it was then said that 'all standard works on subjects relating to the sea are represented, many of them being first editions. . . .'[3] The second factor has been (and is) the income from a special 'Naval History Fund,' the bequest of Alexander M. Proudfit, which has made possible the acquisition of books and manuscripts that could not have been purchased from general book funds; the most popular field has been the French writers of the eighteenth century – Barras de la Penne, Boismeslé, Ozanne, Pastoret, and others. The group of about two hundred and fifty references in the Public Catalogue includes such early works as Morisot's *Orbis Maritimi* (Dijon, 1643), generally called the earliest comprehensive work on naval history, and such national histories as La Popellinière's *L'Amiral de France* (Paris, 1584) and Samuel Pepys's *Memoirs* (London, 1690), among others.

There is comparatively little to say about biography, except that the subject has long been one of the chief interests of the Library. The Public Catalogue yields over three hundred references to collective biographies (individual biographies are not grouped together), including such early works as Boss's *Leeven und Daaden* (Amsterdam, 1676) and the two German versions of 1781, Mylius's *Den Vidt-berømmte Søe-Heltes* (Copenhagen, 1740), and others. The Library gathers and preserves not only books and pamphlets, but also fugitive materials in this field; so the collection is ample. In addition, it indexes periodicals closely for biographical articles, and it has the special 'ship captains' index previously mentioned.

In the field of navigation, the Library aims at routine materials of the nineteenth and twentieth centuries. According to the Public Catalogue, there are some forty subjects which may contain references of interest.

[3] The New York Public Library *Bulletin*, XXXV (1931), 842.

General Navigation has about 1,000 references; Coast Pilots, 1,200; Nautical Dictionaries, three hundred — and so on.

Of the fifty-eight titles, editions, etc., of early works on navigation reviewed by Dr. Wroth, almost all of them are to be found in the Library, either in original or photostated copies; works, editions, etc., printed before 1800 number about two hundred and fifty in the Public Catalogue. Perhaps the most famous title is Medina's *Arte de Nauegar*, previously noticed. Others are Cortés's *Breue Compendio* (Seville, 1551) which Markham says was the first to suggest a magnetic pole, different from the pole of the earth; Sacro Bosco's *Sphæra Mundi* (Venice, 1472), of which there are sixty-nine early printed editions and a fifteenth-century manuscript; Fernández de Enciso's *Summa Geographia* (Seville, 1519), called by Wroth the first Spanish manual.

Many others have contributed to the science of navigation. Captain John Smith's *Sea Grammer* (London, 1627) gives an early description of dead reckoning. Edward Wright's *Certain Errors in Navigation* (London, 1599) effected a complete revolution in the science of navigation, 'bringing to it for the first time a sound mathematical training.'

But it is not only these early works that call for attention. Coast pilots and similar mariners' guides of the nineteenth century have excellent representation. Of course, the United States, Great Britain, and Germany are the largest. As special efforts have been made to complete files of the 'classics' in English, there are over thirty editions of Bowditch's *The New American Practical Navigator*, issued before 1900, including the first, 1802, and a copy of its forerunner, Moore's *The New Practical Navigator*, published at Newburyport in 1799. The Library lacks Haselden's *Seaman's Daily Assistant* (Philadelphia, 1777), said by Dr. Rosenbach to be the first book on practical navigation printed in the United States, but it has the earlier English edition, 1761. There are eight editions of W. N. Brady's *The Kedge-Anchor*, including the first (1841) and second; two of Darcy Lever's *The Young Sea Officer's Sheet Anchor*, including the first (1808); eight of Joseph Blunt's *The Merchant's and Shipmaster's Assistant*, including the second and third; and four of *The American Coast Pilot* (issued under various titles by members of the Blunt family), also including the first (1796).

Among other early works, there are many fields which one would like to explore: some of those six or seven hundred references in the Public Catalogue under 'Sea Life,' such as Thomas Eustace's *Adventures* (London, 1820) and J. R. Durand's *Life and Adventures* (Bridgeport, 1817), for example, or the numerous references under 'Shipwrecks.' One would

like to quote from the first editions of those 'serious writers,' Maydam, Crosfeild, St Lo, and Hodges, among others, who, according to Robinson and Leyland, 'towards the end of the seventeenth century began to concern themselves with the provision of men for the fleet and the health and treatment of seamen. . .' One would like to pore over the magnificent plates of the atlases of those masters of cartographic art of the seventeenth century: Mercator (editions of 1616, 1623, 1638), Blaeu (1659, 1664), Jansson (1652-1675), Goos (1672), and others; or the unique and famous *Atlantic Neptune*.[4]

But we must pass on to the collection of voyages and travels.

James Lenox, one of the founders of the present New York Public Library, was an astute collector of books. The following paragraph, written by a contemporary,[5] indicates the nature of both the man and his collection:

> Mr. Lenox excelled all men I ever knew for seizing ideas and perseveringly running them out to the end. . . . His first absorbing penchant was for collecting early editions of the Bible and parts thereof in all languages. Then he took to books relating to North and South America, including all the great collections of voyages and travels, as well as the prior or original editions of which they were composed. This soon led to collecting everything pertaining to the 'Great Age of Discovery,' whether in Spanish, Portuguese, English, French, Dutch, Italian, or German. . . .

The result of his labors is shown in the books on the shelves. Practically every title in Harrisse's *Bibliotheca Americana Vetustissima* is represented (either in original or reproductions) – this because Mr. Lenox set the tradition of calling anything Americana that even alluded to the Americas. The Library has hundreds of early works – important historically in other fields, as well – because of these allusions, for it has continued the tradition.

The greatest treasures are, however, among works conventionally conceived Americana. The superb piece is the unique Spanish folio edition of the Columbus Letter, dated 15 February / 14 March 1493, announcing to Luis de Santangel, treasurer of Aragon, the discovery of the New World; the Library also has seven of the nine known early Latin editions. Early collections of voyages and discoveries include fine representations of De Bry, Hulsius, and Thévenot, to name those best known. The set of De Bry, with its editions in Latin, French, and German, is a challenging bibliographical puzzle. The 'Jesuit Relations' covers every year and includes variant issues for a number of those years.

[4] cf. the study by Robert Lingel in the Library's *Bulletin*, noted among the Library's publications of interest to this field, at the end of this paper.

[5] Henry Stevens, *Recollections of Mr. James Lenox* (London, 1886), p. 43.

Manuscripts of maritime interest, while not so numerous as the books, are worth attention. Of the famous *Codex Ebnerianus* of Ptolemy's *Geographia*, the maps were reproduced in the first English translation of the 'Geography,' done by Dr. E. L. Stevenson, and published by the Library in 1932. The fifteenth-century manuscript of Sacro Bosco's *Sphæra Mundi* has already been mentioned. There are two manuscripts — one on paper and one on vellum — of Leonardo Dati's *La Sfera* (fifteenth-century), in Italian verse and both delightful in their colored maps, diagrams, views, even real and fanciful pictures of actual buildings of that time.

The Library has for long collected mercantile and shipping papers, log books, and similar material which, while practical, also has its romantic interest. For example, there is Edward Roberts's log kept on board the British convict ship *Mangles* during 1835; Elisha Briggs's log, kept on board the brig *Louisa*, 1796-1797, which carried slaves during a part of one of her voyages. Among the John Ripley papers is a letter from Captain David Jewett, master of the *Alliance*, relating to the capture of his ship by a French privateer in 1798 and his subsequent imprisonment in France. There are the shipping papers of the armed merchant ship *L'Orthezien*, 1794-1834, and the interesting collection of papers of Captain Noah Scovel, of Saybrook, Connecticut, and New York, relating to this merchant and shipowner's trade with England, France, Barbados, Cuba, and British Guiana, 1788-1817.

Such is a sketch of the collections on maritime and related subjects in The New York Public Library. One knowing either the literature of the subject or the resources of the Library will feel how inadequate a few pages of description are; the writer would be the first to assert this. On the other hand, if something of the size and richness of the collections has been suggested, the purpose of this article will have been accomplished. There is nothing to add — unless we commence all over again, naming other titles and mentioning other related fields — except to observe that while Furtenbach may have written badly on shipbuilding, he espoused an excellent 'Wahlspruch'[6] (in Italian, of course):

Con la patienza, s'acquista scienza.

A very good motto for any research worker!

These essays and lists are the principal sources used:

Anderson: R. C. Anderson, 'Early Books on Shipbuilding and Rigging,' in *The Mariner's Mirror*, X (1924), 53-54.

Bibliotheca: Bibliotheca Architectura Navalis in the British Museum, an anonymous typewritten compilation of fifty-seven leaves, apparently of the late nineteenth century. Its annotations are spirited, its opinions emphatic.

[6] Quoted from *Allgemeine Deutsche Biographie*, VIII, 251.

Maggs: Maggs Brothers, *Bibliotheca Nautica* (London, 1928-1938). 4 parts.

Markham: Sir A. H. Markham, 'An Enumeration of the Works on the Art of Navigation previous to and during the Age of Elizabeth,' in his Hakluyt Society edition of *The Voyages and Works of John Davis, the Navigator* (London, 1880), p. 339-367.

Robinson and Leyland: C. N. Robinson and John Leyland, 'Literature of the Sea' [and] 'Seafaring and Travel,' in the *Cambridge History of English Literature* (Cambridge, 1932), IV, 67-108.

Rosenbach: Rosenbach Company, *The Sea: Books and Manuscripts* ([New York and Philadelphia,] 1938).

Wroth: L. C. Wroth, *The Way of a Ship; an Essay on the Literature of Navigation* (Portland, Me., 1937).

The following publications of the Library in this field may be of interest, as well. As most of them are, unfortunately, out of print, the Library's *Bulletin* citation is given, if they appeared in that publication, with an indication of whether off-prints were made, and if these are available. The *Bulletin* citation may also be useful to those who have access to a file of it; it will be found in many of the larger libraries.

The Atlantic Neptune. By Robert Lingel. Illustrated. July 1936. To be reprinted, with additions.

Columbus. Letter of Columbus on the Discovery of America. Facsimile of the pictorial editions. Cloth, 1892, 75¢; paper, 1893, 50¢. This includes four early editions, but not the Lisbon 1493 edition mentioned in this paper, which is described by Dr. Wilberforce Eames, with an illustration, in the August 1924 *Bulletin*, now out of print.

Cruise of the U. S. Brig *Argus* in 1813. Journal of Surgeon James Inderwick. Edited by Victor Hugo Paltsits. Illustrated. June 1917. Reprint, 10¢.

General atlases of geography (ancient and modern) in The New York Public Library. February 1900. Not reprinted.

Nautical and naval art and science, navigation, and seamanship, shipbuilding, etc. [Works in The New York Public Library.] June-September 1907. Reprinted, but out of print.

Naval architecture and shipbuilding; a list of references in The New York Public Library. January-February 1919. Reprinted, but out of print.

Naval history, naval administration, etc. [Works in The New York Public Library.] June-November 1904. Not reprinted.

The Pitcairn Bible. Illustrated. June, September 1924. Reprinted, with revisions, 1934. 15¢.

Ptolemy. Geography; translated into English and edited by Edward Luther Stevenson. [Contains the Ebner maps.] 1932. Did not appear in the *Bulletin*. $60.00.

Submarines; a list of references in The New York Public Library. January-February 1918. Reprinted, but out of print.

Torpedoes; a list of references to material in The New York Public Library. October 1917. Reprinted, but out of print.

Notes

Oviedo on Navigation

Gonzalo Fernandez de Oviedo y Valdés, the first official historian of Spanish America, has an interesting chapter (lib. ii, ch. 9) on navigation to and from the New World in his *Historia General y Natural de las Indias*,[1] first published in 1535. He concludes with some remarks about practical navigation that deserve to be better known. Accordingly, I have translated them, as follows:

'What I have described cannot be learned in Salamanca or in Bologna or in Paris but only in the school of the compass-card, where the mariner's needle is set, and with quadrant in hand shooting the North Star at sea by night and the sun by day with the astrolabe. For, as the Italians put it, "the table needs more than a white cloth," so I say that navigation needs more than words; for, though the cloth be white, the guests will not eat with that alone; so, even if one studies cosmography and knows it better than Ptolemy, he will not know how to navigate, no matter how many words are written, until he practises it. Nor will he who studies medicine treat the patient properly until he is trained in taking the pulse and by it understands the paroxysms and crises which must be expected in the disease. Similarly, the skilful pilot, watching the pulse of his compass-card where the lodestone is applied to the needle, it shows him the north; and the quadrant the altitude of the North Star, and the astrolabe that of the sun. His experience schools him in trimming the sails and in managing his mariners and people, and the lead reveals the deeps. Trained to the sea from page-boy up, he holds the rating to which his talents entitle him; for although they begin the art as pages they do not all become pilots, no more than all who study attain the doctorate. But it can be regarded as well established that he who is not trained at sea from the rating of the meanest little page-boy has never become a first-class mariner.'

SAMUEL ELIOT MORISON

[1] *Historia General y Natural de las Indias* (1851 ed.), I, 39-40.

The Last Whale Ship

Charles W. Morgan

On the morning of 21 July 1841 New Bedford's whaling fleet, which then consisted of seventy-five vessels, received a worthy addition when the good ship *Charles W. Morgan* slid down the ways of Jethro and Zachariah Hillman. Stoutly constructed of live oak, the *Morgan* had an active whaling career of eighty years which ended with her return from a cruise in 1921, and surpassed in length that of any other whale ship on record. Her thirty-seven voyages had resulted in 'catchings' to the value of two million dollars.

After lying idle for several years, she was rerigged and reconditioned in 1925, and placed in a berth at Round Hills, Massachusetts, the South Dartmouth estate of Colonel E. H. R. Green, for preservation. This was accomplished under the active leadership of Harry Neyland, through the generosity of Colonel Green who, thereafter, provided the funds for the up-keep of the vessel. His death in 1936, before provision had been made for permanent preservation, made it necessary for Whaling Enshrined, Inc., the New Bedford association which held title to the ship as a public trust, to take steps to secure funds from other sources, if the vessel was to be saved. Accordingly, a campaign was begun to raise forty thousand dollars to restore the ship and to remove her to a

more accessible location for exhibition. Although conducted energetically, and with fine, public-spirited enthusiasm by a substantial group of New Bedford citizens, the campaign failed, chiefly because the city, in recent years, had suffered crippling reverses which had wiped out a majority of the old whaling fortunes. Meanwhile, nearly five years passed, during which time the ship suffered severe damage in the hurricane of 1938, and was slowly deteriorating — facts which would increase salvage costs even in a time of normal prices and settled conditions. With both costs and conditions rapidly becoming more unfavorable, it became evident to the members of Whaling Enshrined, Inc., early this year, that, if the ship were to be preserved, new and more effective measures would have to be adopted without delay.

Fortunately, they had a strong sense of the national as well as the local significance of the *Morgan,* and decided that, since there was small likelihood that the ship could be kept in New Bedford, they would endeavor to insure her preservation elsewhere. A canvass of possibilities disclosed but one marine organization so situated as to undertake the task with a reasonable prospect of success. This was the Marine Historical Association, Inc. which had been founded in 1929 at Mystic, Connecticut, once an active whaling center, not far from the old whaling ports of New London, Stonington, Westerly and Sag Harbor. Many of its members were descendants of whaling families, and keenly interested in the traditions of the industry, so much so that they had built up an extensive whaling collection as an adjunct to the general nautical museum. By a fortunate circumstance, its museum had been located on the site of a fine old shipyard where there was a safe, sheltered deep-water channel, and ample space for berthing old sailing craft. Moreover, it was not merely the only nautical museum in America so situated, but one of its principal objectives, from the time of its founding, had been the preservation of early types of vessels, and the reconstruction of a typical early water-front and shipyard. The property of the association was, therefore, admirably adapted for the preservation of the *Morgan,* and the suggestion fitted in with long-standing plans. The undertaking, indeed, involved postponing indefinitely other important developments, but the possibility that the ship might soon go to pieces in winter storms, and that future defense efforts might shortly prevent public undertakings of this character for years to come, led the Directors of the Association to agree to salvage and preserve the ship without delay. The offer of Whaling Enshrined, Inc., made on 31 July 1941, to give the ship to the Association was therefore accepted, and her removal is now under way.

In carrying out the work, the Marine Historical Association, Inc. plans to place the ship in a bed of sand, much as she was at Round Hills, on the shore of the old Greenman shipyard, immediately south of the museum buildings. She will be surrounded with wharves; and, unless prevented by defense requirements, old shops and lofts, typical of early small seaports and shipbuilding centers, will be erected and equipped on the adjoining water-front. Eventually it is planned to extend the scope of the work to include the complete restoration of the old shipyard as well. From this it will be seen that the Marine Historical Association proposes to do for maritime New England on a small scale what has been done in a much larger way at Williamsburg and Greenfield Village.

In this reconstruction, the *Morgan* will be the central feature. Altogether, it may prove the most fitting and useful disposition that could have been made of the old ship, and one that should provide an effective and conclusive answer to criticisms which have been level-

led at New Bedford for failing to provide the funds for her preservation, regardless of the fact that she has built and maintains the finest whaling memorial in the world. The *Morgan* is not merely the last New Bedford ship. She is the last American whale ship, and, aside from naval vessels, she is the last American-built full-rigged ship. The obligation to preserve her belongs to America —not to New Bedford alone. The debt to the stalwart breed of men and ships which played a leading part in the upbuilding and development of the entire country is national, not local. It would have been appropriate and fitting if the ship could have been preserved at New Bedford by New Bedford. It is more fitting that she should be preserved by the united efforts of a group representative of America as a whole.

Since no story is the worse for an element of coincidence, it is interesting to note that Mystic's first, and, at that time, only whale ship, the *Hydaspe,* was sold to New Bedford in 1826. One of her Mystic owners who joined in the sale was Charles Mallory whose share in the *Hydaspe* represented his first investment. That New Bedford's last whale ship is coming to Mystic is due primarily to the interest of Philip R. Mallory, President of the Marine Historical Association, Inc., and great-grandson of that same Charles Mallory who sold his first ship to New Bedford one hundred and fifteen years ago.

CARL C. CUTLER

Attacks on Vessels by Enraged Whales

Although almost every nineteenth-century whaling voyage made in the heyday of New England's whaling industry brought back its reports of whaleboats smashed by the fury of a whale who naturally resented being struck by a harpoon, it was rare that any whale was driven to the extreme of attacking the whale ship itself. Entries such as the following for the ship *Montano* of Nantucket in 1845, 'Third Mate, Fuller, and three men drowned by the staving of a boat by a whale,' are commonplace in Alexander Starbuck's standard work.[1] But he observes that 'the pugnacity of the whale is rarely directed against the ships themselves.'[2]

Quite by accident, however, a ship might collide with a whale and cause herself irreparable damage. Starbuck lists the following which resulted in the loss of the ships:[3]

1796, Ship *Harmony,* off the Coast of Brazil. Crew reach mainland in boats.

1807, Ship *Union,* in the North Atlantic. Crew of 16 in two boats manage to reach the Azores, 600 miles in seven days.

In other instances mentioned by Starbuck, the vessels were damaged in various degrees, but managed to reach port. In this connection it is interesting to observe that even the 22,000-ton Dollar Line steamship *President Hoover* was delayed several hours when she ran into a whale in the Pacific on her maiden voyage in 1932.

There are, however, several classic examples of an outright attack sustained by a vessel. These were usually made by a lone bull whale and practically every secondary work on whaling recounts one or more of them in full detail.[4] For this reason we will no more than mention them here, referring the reader to accounts of the several disasters by footnote:

1820, Whaleship *Essex* of Nantucket.

[1] Alexander Starbuck, *History of the American Whale Fishery from its Earliest Inception to the year 1876* (Waltham, Mass.: the Author, 1876), p. 427. Prepared for the 'Report of Commissioner of Fish and Fisheries.'

[2] Ibid., p. 122.

[3] Ibid., p. 115 note.

[4] For example Charles Boardman Hawes, *Whaling* (Garden City, N. Y.: Doubleday Page & Co., 1924), p. 301 *et seq.* Chapter entitled 'Tit for Tat.'

Also Foster Rhea Dulles, *Lowered Boats* (New York: Harcourt Brace, 1933), p. 143 *et seq.* Chapter entitled 'Fury and Vengeance.'

Vessel charged by enraged bull and sunk. After unparalleled sufferings in their open boats several of the crew were saved.[5]

c. 1850, Whaling bark *Parker Cook* of Provincetown. Twice charged by whale near the Azores. Vessel damaged but managed to reach port.[6]

1850, Whaleship *Pocahontas* of Tisbury. Whale stove in two timbers while the ship was cruising the Brazil Banks. With much difficulty she made Rio de Janeiro.[7]

1850, Whaleship *Ann Alexander* of New Bedford. Vessel stove in and sunk. Crew picked up shortly after. Later on another whaler took a whale with irons belonging to the *Ann Alexander* still in him.[8]

1855, British schooner *Waterloo*. Unprovoked attack made on grain carrier *Waterloo* in the North Sea, which sank in two hours.[9]

1902, Whaling bark *Kathleen* of New Bedford. Rammed and sunk by enraged whale. One boat with nine men sailed 1,060 miles to Barbadoes in nine days. Three other boats picked up the next day.[10]

In every recorded case the attack was made by a single whale and historians of the fisheries seem to have missed what might well be described as the most fantastic mass attack ever sustained by a vessel. In 1896 this befell the 269-foot American iron hull coastwise steamship *Seminole*, built ten years previously by Cramp's Shipyard, Philadelphia. The complete dispatch as telegraphed to the New York *Herald* is quoted below. It is obvious that a wooden hull New Bedford whaler could not have sustained such punishment very long.

JACKSONVILLE, FLA., Aug. 4 [1896]

With great dents in the plates on each side, and with some of the delicate machinery in the engine-room disarranged, the steamer *Seminole* of the Clyde Line arrived here from New York this morning. The damage to the vessel was the result of an encounter with monster whales. Soon after passing Sandy Hook I. E. Morton, the purser, says the vessel ran into a school of whales. Soon six of the monsters appeared almost under the ship's bow, and she crashed into one of of them.

The impact apparently broke the whale's back and it began to spout blood. Then the officers and passengers witnessed a remarkable sight. As if in a rage, the five other whales drew off a short distance and dashed madly against the vessel, causing her to tremble from stem to stern. The whales repeated this performance four times and at each collision the *Seminole* quivered as if about to go to the bottom.

Many of the passengers were hurled to the deck and bruised. Several women fainted. So terrible was the shock that some of the furniture in the saloon was broken from its fastenings. The whales were badly injured by the collision and after the fourth rush drew away spouting blood. They tried to come again but moved slowly, because of their injuries, and the vessel soon distanced them.

It was feared that the *Seminole* was badly damaged but examination shows only the superficial injuries mentioned.

ALEXANDER CROSBY BROWN

[5] Contemporary accounts by Captain George Pollard, First Mate Owen Chase, and Second Mate Thomas Chappel have been collected in one volume edited by Robert Gibbings. *Narratives of the Wreck of the Whale Ship* Essex (London: Golden Cockerel Press, 1935).

[6] Captain E. C. Williams, *Life in the South Seas: History of the Whale Fisheries* (Boston: Farwell Printers, 1860), pp. 13-14.

[7] Ibid., p. 13. See also *Gleason's Pictorial*, I (19 July 1851), 36.

[8] Ibid., II (3 January 1852), 5; Williams, op. cit., pp. 12-13; Starbuck, op. cit., pp. 119-121.

[9] Starbuck, op. cit., p. 116 note.

[10] Thomas H. Jenkins, *Bark* Kathleen *Sunk by a Whale* (New Bedford: Hutchinson, 1902). Reproductions of paintings of the *Kathleen* and the *Ann Alexander* appear in George Francis Dow, *Whale Ships and Whaling* (Salem: Marine Research Society, 1925), pp. 273, 341.

Documents

Bradford and Palfrey to Bradford and Palfrey

[Palfrey Papers, in private possession]

Retired sea-captains Gamaliel Bradford and John Palfrey, after signing Articles of Agreement to become 'Copartners in buying, selling & vending Goods & Merchandise of various sorts,' opened a ship-chandler's shop at 5 Kilby Street, Boston, in January 1801. While their business was still young and hopes ran high, Captain Bradford went to Wiscasset, Maine. His first business letter to his partner, and the only one which has survived, is printed here.

John Palfrey of Boston, 1763-1843, had been a sailor and a merchant in the West Indies and Europe before he joined Bradford but not until he settled on a Louisiana plantation in 1810 did he become prosperous. Gamaliel Bradford of Duxbury, 1763-1824, had become a shipmaster after fighting in the Revolution. An engagement with four French privateers in the Straits of Gibraltar in July 1800 cost him a leg, and he retired to Boston and a quiet life as merchant and warden of the Massachusetts State Prison.

The 'Goods & Merchandise of various sorts' of Messrs. Bradford & Palfrey had little sales appeal, even in the busiest port of New England, and the partnership succeeded no better than other business ventures of the Captains. The firm was dissolved late in 1803, to the cost of wit and humour in Boston business.

[Gamaliel Bradford to John Palfrey, August 1801]

I knew a lady once, who the next day after her marriage had occasion to write to her new husband, and she was very much perplexed how to address him. I should feel a little of the same kind kind of perplexity at this moment did not a noble example of a brother seman very oppertunely occur. Captain Pepper upon his first promotion to this enviable title used to take the speaking trumpet and putting it into a large empty cask very voiceferously bawl out *Captain Pepper* highly delighted wt the sound. Now I feel as great an intch to see how handsome it looks to begin with

Messrs Bradford & Palfrey

Gentlemen— I arrived safe at Wiscassett after a journey of five days, of intolerable hot weather—in the course of the way we passed over a few hills, and came in *sight* of several rocks, and stoney pieces of road but we weathered them all in safety. We visited on our way several of the most celebrated parts of Europe, and slept the first night upon a desolate island—I cannot say uninhabited because there was one house on it—we left Poland to the northward of us, but past thro' *Brunswick* and *Bath,* and expect next week to go to *Dresden* I don't know whether we shall be entertained with a military review of his Prussian majesties' troops, but we are to have an Eclesiastical parade.

I hope you are doing great business and want my very active assistance. I assure you I am not idle here, I have solicited a number of gentlemen for their *custom,* but have not been very fortunate—the first I applied to was a great merchant. when I told him we kept a *ship chandlers store* he did not know what I meant, & asked me what I sold. I told him furniture for vessells he said he had furniture in his house but did not know that vessells carried any. I explained myself by mentioning lanterns, compasses, speaks trumpets, &c. Why says he your Boston vessells I suppose have these things, but we do very well without—a lobster shell answers very well for a lantern. and we can track a vessell to the W. I. by the shingles and

chips that fall over. and as for speaking trumpets we never want them our vessells always avoid speaking with others at sea least they should want anything—however says he if you sell very cheap and give a long credit, I may call sometime and take half a dollars worth of you. I thanked him, and turned to another who I knew had several sail of vessells—but he seem to know as little about *ship chandlery* as his neighbour—but said if we kept *cutnails* he knew of a friend of his that wanted half a thousand and he would recommend him to our store—I hope you will keep a vigilent look out for him

I am with profound respect
Gent[lm] yours mightily
Bradford & Palfrey

Wiscasset August —
[Endorsed]
Gam[l] Bradford
Wiscasset August 1801

Contributed by George McKee Elsey.

Unusual Photographs of Schooners and Barkentines

Two unique photographs are submitted with the following notes:

The first, Plate 13, is a view taken from the old office building of the Newport News Shipbuilding and Dry Dock Company on 12 September 1906 and shows in the one view a three-, four-, five-, six-, and the world's only seven-masted schooner. Credit for having had this photograph made rests with Mr. Ernest W. Sniffen who, on coming to his office in the Yard on this particular day, observed the view through a window looking west across the plant to the James River. Mr. Sniffen immediately appreciated the unique qualities of the scene and summoned the Shipyard photographer, Mr. Charles J. Dorr. However, before the camera could be set up, a small two-masted oyster schooner, also in view, was carried upstream on a strong flood tide beyond the range of the lens thus depriving the resultant photograph of the one class required to fully complete the series.

The following vessels, identified by Mr. E. O. Smith, shipyard historian, are depicted:

Three-masted wood schooner *Sally I'on* (♯116,028); 550 gross tons; 478 net; 143.8 x 34.7 x 12.8; built in 1884 at Searsport, Maine, by G. Merrill and owned at the time the photograph was taken by J. Ireland, Philadelphia. Burned at Portland, Maine, in June 1912.

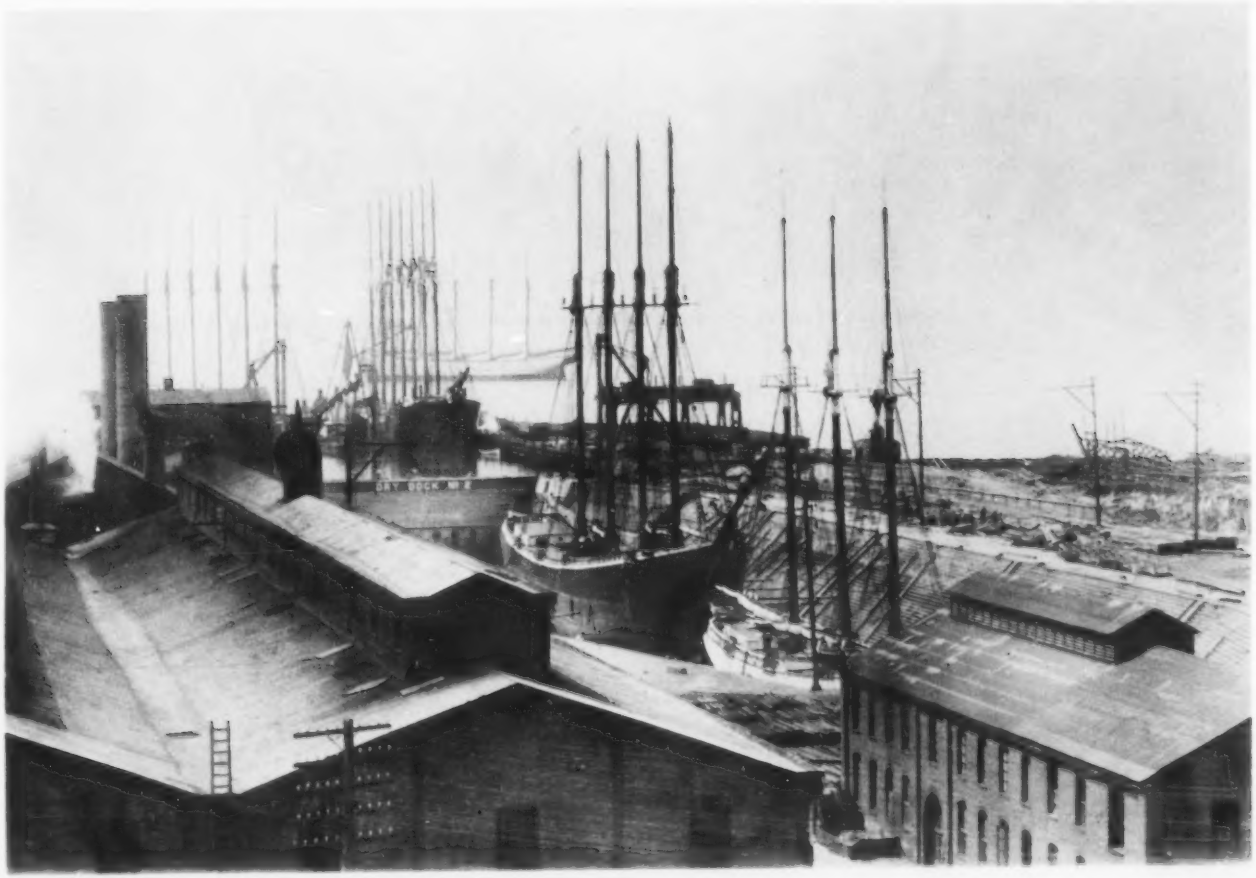
Four-masted wood schooner *Malcom Baxter Jr.* (♯93,011); 1,732 gross tons; 1,479 net; 226.3 x 45.0 x 20.8; built in 1900 at Camden, Maine, by H. M. Bean and owned in 1906 by G. Bailey, Perth Amboy, New Jersey. Stranded at Carlisle Bay, Barbadoes, in May 1920.

Five-masted wood schooner anchored in the stream: unidentified.

Six-masted wood schooner *Eleanor A. Percy* (♯136,844); 3,401 gross tons; 3,062 net; 323.5 x 50.0 x 24.8; built in 1900 at Bath, Maine, by Percy & Small and owned in 1906 by her builders, Bath. Foundered about 500 miles off the Irish Coast in December 1919.

Seven-masted steel schooner *Thomas W. Lawson* (♯145,943); 5,218 gross tons; 4,914 net; 375.6 x 50.0 x 22.9; built in 1902 at Quincy, Massachusetts, by Fore River Ship & Engine Company and owned in 1906 by Coastwise Transportation Company, Boston. The *Lawson* was being converted into an oil carrier at the time the photograph was taken and, as is well known, she was lost on 14 December 1907 on the Scilly Islands off the Coast of Cornwall.

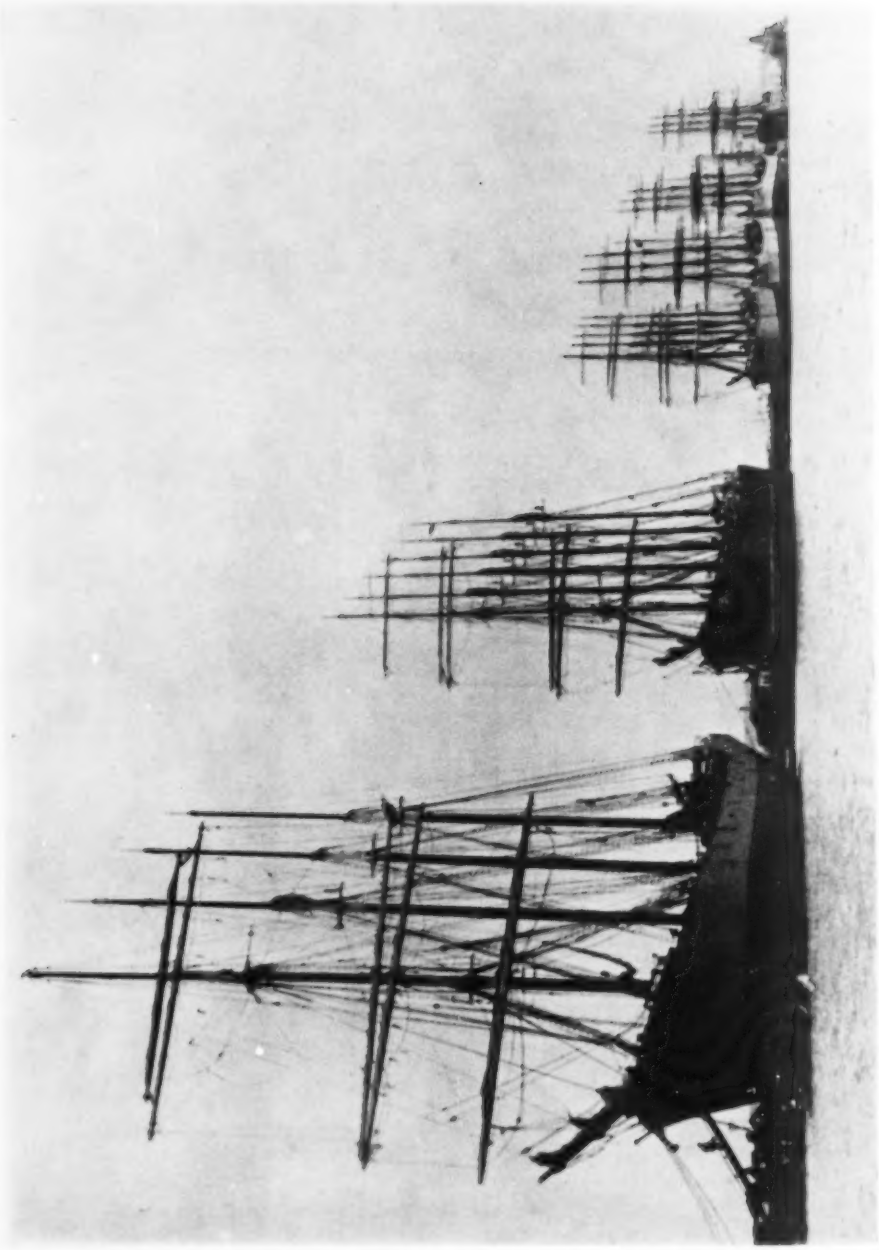
The five-masted schooner cannot be identified with certainty. Records of the Newport News Shipyard indicate that around this time the *Jennie French Potter* (♯77,392) and the *James W. Paul Jr.* (♯77,502) visited the yard. The five-master might be one of these vessels but was more likely one of the Palmer fleet of wood 'Down Easters': either the *Paul Palmer* (♯150,962), the *Prescott Palmer* (♯150,930), or the *Baker Palmer* (♯3,902)



Three- to Seven-Masted Schooners at Newport News, Virginia, 1906

Reproduced from a photograph by C. J. Dorr in The Mariners' Museum

PLATE 13



Three- to Six-Masted Barkentines at Newcastle, N.S.W., 1921

Reproduced from a photograph by Captain A. G. Wilkers

which, according to newspaper shipping records, had just arrived in Hampton Roads after an almost even race from Boston to the Virginia Capes.

An oil painting after this photograph, entitled 'The Passing of an Era,' was made for The Mariners' Museum by Mr. Thomas C. Skinner in 1935. In this painting the two-masted vessel was included to restore the composition as first seen by Mr. Sniffen.[1]

Unfortunately the circumstances under which the second photograph, showing barkentines, Plate 14, was made are less well known. It was taken in either May or June 1921 by Capt. A. C. Wilvers of the American four-masted bark *Muscoota* in the harbor of Newcastle, New South Wales, Australia, and shows every one of the four types of barkentine including the six-masted *E. R. Sterling*, one of two known deep water vessels of this rig.[2] Captain Wilvers has identified three of the four barkentines depicted.

Three-masted barkentine in the distance: unidentified.

Four-masted steel barkentine *Alta* (♯213,305); 1,381 gross tons; 1,262 net; 226.0 x 44.0 x 19.0; built in 1900 at Port Glasgow, Scotland, by R. Duncan & Company and owned in 1921 when the photograph was taken by The Pacific Shipping Company, San Francisco. Went missing in February 1923 on a passage from San Pedro, California, to Bellingham, Washington.

[1] F. F. Hill, 'The Passing of an Era,' *Sea Breezes*, XXIII (1938), 289-290.

[2] John Lyman, 'The Barquentine Rig in America,' Ibid., XXIII (1938), 286-288.

Five-masted iron barkentine *Monterey* (♯201,638, ex-*Cypromene*); 1,854 gross tons; 1,694 net; 260.0 x 39.5 x 24.0; built in 1878 at Southampton, England, by Oswald, Mordaunt & Company as the ship *Cypromene*. Stranded and refloated about 1905, and renamed *Monterey* of Matson Navigation Company and rigged as a four-masted schooner. She was given five-masted barkentine rig at San Francisco in 1919. She was owned in 1921 by the Fife Shipping Co., Inc., San Francisco. Broken up at Los Angeles in 1934.

Six-masted iron barkentine *E. R. Sterling* (♯212,603, ex-*Everett G. Griggs*, ex-*Lord Wolseley*, ex-*Columbia*, ex-*Lord Wolseley*); 2,577 gross tons; 2,351 net; 308.2 x 42.9 x 25.1; built in 1883 at Belfast, Ireland, by Harland & Wolff as the four-masted ship *Lord Wolseley*. She was dismasted off Cape Flattery in 1903 under the German flag and name of *Columbia*. She was towed into Vancouver; condemned and sold, and repaired as the six-masted barkentine *Everett G. Griggs*. In 1910 she became the *E. R. Sterling* in the lumber trade. Owned in 1921 by the Sterling Shipping Company, Seattle, Washington. Broken up at Sunderland in 1926 after being dismasted. .

Three unidentified four-masted barks appear in the photograph. One of these is responsible for the photograph as at Liverpool by T. Royden & Sons and owned in 1921 by the U. S. Shipping Board, whose master, Captain Wilvers, is responsible for the photograph as mentioned above.

Contributed by Frederick F. Hill, John Lyman, Alexander C. Brown.

Queries

9. COBBLESTONE TRADE. Between 1840 and 1850 a number of people on the Maine Coast earned a part of their living by bringing cobblestones to Boston. These stones were not the rectangular granite blocks but the smooth, round, water-worn pebbles found on beaches that are exposed to a heavy surf. The cargoes of stone were frequently discharged at what was known as the 'Stone Wharf' in Charlestown. I am interested in obtaining any information about this wharf, the trade in general, people connected with it and the method in which it was conducted. When did the rectangular granite blocks replace the beach stones for paving streets? Were these beach stones used as paving in all Atlantic Coast Cities? Were they ever used in inland cities? If used on the streets of coastal cities south of New England did the supply of stones come from Maine or were other sources of supply available?

E. S. DODGE

10. WIRE RIGGING. I should like to hear of any instances of early use of wire or metal rigging.

E. D. LOVEJOY

11. STAYSAILS. Can any of NEPTUNE's readers give some information relating to the names of staysails carried between main and mizzen masts of barks and brigantines built in the seventies and eighties?

In Captain F. W. Wallace's *In the Wake of Wind Ships,* I find:

(*a*) Facing p. 160 a photograph of the Nova Scotia bark *Bertie Bigelow* of Yarmouth which shows four staysails.

(*b*) Facing p. 229 a photograph of the bark *R. Morrow* of Maitland with the same rig.

(*c*) Facing p. 81 a photograph of the brigantine *St. Michael* of Quebec with *five* staysails (three of which are quadrilateral sails).

As in barks and brigantines there are no mizzen topgallant or royal masts it seems rather incorrect to use the terms topgallant and royal staysails.

Was it customary to use the terms:
Lower mizzen staysail?
Upper mizzen staysail?
Lower mizzen topmast staysail?
Upper mizzen topmast staysail?

I am engaged in collecting material for a dictionary of marine transportation and nautical terms, and would be pleased to correspond with any readers of the NEPTUNE who are interested in the undertaking.

R. DE KERCHOVE

12. W. P. STUBBS. Is there any information readily available about the life and achievements of W. P. Stubbs, the marine painter? In accuracy of detail and rendition, many of his paintings of small craft, schooners and brigantine are very good, and he must have been a prolific worker. Who was Mr. Stubbs? When and where did he work? Is there any considerable collection of his paintings?

J. M. BURDELL

13. CAPE HORN. Can anyone give me references to printed or manuscript narratives of landings on Cape Horn and Diego Remirez?

H. C. PALMER

14. EARLY PAINTINGS. Do any of our readers know of contemporary paintings or drawings of American square topsail sloops?

M. V. BREWINGTON

Answers

2. Brady Photographs. While unable to turn back to the period of the Brady photographs, I was familiar with the harbor craft of New York Bay fifty years ago. The gilded spread eagle was the most popular ornament for pilot houses on large and small steamers. Many tugboats carried small carved figures, some having reference to the name of the vessel. A few were of classic design, but the favorite seems to have been the American Indian, done evidently by the same school of sculpture producing the wooden Indians used by cigar stores to mark their location. The sea-going Indian always brandished a tomahawk and was posed with right foot raised and resting perhaps on a prostrate victim.

It is to be hoped that some marine historian will extend your research on local types of hull and rig, to include the sailing lighter peculiar to New York Harbor. Heavily built, apparently all of the same size and model, these lighters operated in the then congested harbor and river traffic in a manner reflecting high credit on the skill of the crew.

I have been able to locate but one picture showing the details of hull and rig —heavy spar, with marked rake, gaff carried aloft, loose footed mainsail, brailing to the mast, and small jib.

GEORGE F. GILMORE

10. Wire Rigging. The schooner *Ferrata* mentioned[1] by Mr. John Lyman as one of the early three-masted schooners has an additional claim to fame: she was apparently one of the first American vessels to be rigged with iron instead of hemp. A contemporary description of her, probably copied from a Baltimore newspaper, is to be found in the 1 November 1827 issue of the *American Daily Advertiser* (Philadelphia).

'There is now lying at Jackson's Wharf, Baltimore, a vessel which appears to us a novelty in naval architecture. She has three masts, rigged fore and aft fashion as it is called, or similarly to the ordinary schooner. Her standing rigging is all of iron served with rope yarn—the shrouds are continuous bars, and the cross pieces usually termed ratlines are strips of wood. The stays are composed of long links about a yard in length. The tonnage of this nondescript is 336 tons, custom house measure. She is expected to sail very fast and it is said works well, as was tested by her working out of Mile's River where she was built under the direction of Captain Miles King, against wind and tide.'

DOROTHY R. BREWINGTON

1 The American Neptune, I (1941), 174-175.

News

The Mariners' Museum

Newport News, Virginia. In the summer of 1938 Clifford D. Mallory (1881-1941), arranged that the Herreshoff fin-keel yacht *Dilemma,* which for many years had been on the beach at Fishers Island, be sent to The Mariners' Museum. This 38-foot vessel, built at Bristol, Rhode Island, and launched in October 1891, was the first fin-keel yacht and was designed by N. G. Herreshoff as a 'trial horse' for the large cup defenders which proved so successful later on.[1]

During the spring of 1941 reconstruction of the *Dilemma* from plans made available by the Herreshoff Manufacuring Company was carried out under the direction of Captain Roger Williams by a group of five Newport News Shipbuilding and Dry Dock Company apprentice school students. A new bulb keel was cast and the boat thoroughly gone over and re-rigged largely with donated materials. She was re-launched on 19 July 1941, and moored off the Hampton Yacht Club and was in use during the past summer. It is intended that she be permanently displayed at the Museum as a joint memorial to the genius of Captain Nat Herreshoff and to the yachting enthusiasm and skill of Clifford Mallory.

Peabody Museum Marine Associates

Salem, Massachusetts. On 23 June 1941 William H. Tripp of the Old Dartmouth Historical Society, New Bedford, gave an illustrated lecture on 'Whaling —Past and Present.' On 28 July M. V. Brewington spoke on the controversy concerning the parts played by Joshua Humphreys and Josiah Fox in designing the early frigates of the United States Navy. On 25 August John M. Richardson of Rockland, Maine, spoke on the rise and fall of Penobscot Bay steamboats.

[1] C. D. Mallory, '*Dilemma*, the First Fin Keel,' *Yachting* (July 1941), pp. 45-46.

Steamship Historical Society

Salem, Massachusetts. At the annual meeting of the Society, which was held at the Peabody Museum on Saturday and Sunday, 23-24 August, William King Covell of Newport, Rhode Island, was elected President for a term of three years. A committee, consisting of Walter Muir Whitehill (Chairman), A. R. Tetlow, Edwin A. Patt, and C. Bradford Mitchell, was appointed to investigate the possibility of the Society publishing a series of reprints of scarce articles and sections of out-of-print books relating to steamship history. The winter meeting of the Society will be held in New York City on 27-28 December.

Notes on Contributors to The American Neptune

Alexander Crosby Brown is Secretary of The Mariners' Museum, Newport News, Virginia.

Karl Brown is a member of the staff of the New York Public Library.

T. C. Gillmer, an officer in the United States Navy, collected material on Mediterranean craft while stationed in the Mediterranean.

F. W. Howay, a retired judge, is the author of numerous books and articles on the early history of the Northwest Coast.

John Lyman is an officer in the United States Naval Reserve, now on active duty.

James Duncan Phillips, formerly treasurer of Houghton Mifflin Company, is the author of *Salem in the Seventeenth Century* and *Salem in the Eighteenth Century.*

David B. Tyler is the author of *Steam Conquers the Atlantic.*

Book Reviews

JOHN PHILIPS CRANWELL, *Spoilers of the Sea: Wartime Raiders in the Age of Steam* (New York: W. W. Norton & Co., 1941). 5½" x 8½", cloth. 308 pages, 16 illustrations, 2 folding charts, index. $3.00.

Lieutenant Cranwell has a marked preference for the underdog, hence the publication of this interesting book on surface sea raiders. In war-time vessels engaged in this arduous profession were invariably sent out by the weaker nations whose coasts had been blockaded by the navies of the stronger. The purpose of the raider was two-fold. She was commissioned to 'sink, burn, and destroy' enemy merchantmen and in so doing not only to disrupt normal trade but, equally important, to insure that her presence on the sea lanes formed a constant potential threat causing strong naval forces necessary for blockade, convoy, or other duties to be deflected to seek her out. Her efficiency, indeed her life itself, depended on her ability to shroud her lightning movements in secrecy and at all costs to avoid engaging her enemy's warships. Her role was that of the lone wolf.

The sailing vessel able to keep the seas for long periods replenishing her stores at the expense of captured merchant ships was the ideal vehicle for sea raiding. She could seek out an unfrequented spot, careen and otherwise maintain herself in condition without recourse to formal naval establishments and, most important, needed neither coal nor oil. The advent of steam first and wireless second changed all that and this book begins with the first use of steam driven raiders sent out by the Confederacy in the War of Secession. It carries down to include the *Graf Spee* and other episodes of the present war.

The author confesses that he has 'made no attempt at original research' for 'most of the participants in the events described have written memoirs . . . and it is on these accounts' that the book has been put together. The focus is, therefore, on story-telling and not on scholarship, hence a critical review is uncalled for. This honesty on the part of the secondary historian is unfortunately not the rule, and for this reason the author of *Spoilers of the Sea* is to be highly commended for executing a fine job along the lines prescribed despite the very few minor errors.

The careers of the following Confederate raiders rate a chapter each: *Sumpter, Florida, Alabama, Tallahassee,* and *Shenandoah.* A chapter then covers the sporadic raiding occurring during the numerous wars between the War of Secession and the outbreak of World War I. The following German surface raiders are then covered: *Dresden, Karlesruhe, Emden,* four converted passenger liners, and *Moewe, Wolf,* and *Seeadler.* A final chapter brings the subject of surface raiding to the present war and concludes with the epochal defense of its convoy by H.M.S. *Jervis Bay.* For the first time in the book the hero now is the victim of a raider's attack, thus proving in the end the author's predilection for those holding the short end of the stick.

ALEXANDER CROSBY BROWN

The Mariners' Museum

FELIX RIESENBERG, JR., *Golden Gate, The Story of San Francisco Harbor* (New York: Alfred A. Knopf, 1940). 6″ x 8⅞″, cloth. 347 + xii pages, illustrations. $3.50.

Any attempt to write a popular history of the shipping activities of San Francisco Bay runs the risk of becoming overwhelmed with the local color of the region, and the present work is no exception in this regard. In brisk journalistic style the author, who is shipping reporter of the *San Francisco News,* sketches the development from Spanish times to the present of California's leading port, but unfortunately he spends too much time away from the water-front. The Gold Rush, the Vigilantes, Emperor Norton, the Big Four, the Barbary Coast, the Fire—all the old clichés of San Francisco history are included, regardless of their bearing on the maritime picture. This impairs the book from the standpoint of nautical history rather than readability, although Mr. Riesenberg could have found just as much color in the ship-owners of the port and their affairs. He gives more than passing mention to only three, Dollar, Matson, and Spreckels, and even than fails to notice that Claus Spreckels is the reputed inventor of the great San Francisco specialty, steam beer.

San Francisco was once the leading whaling and fur-sealing port of the world and once had more millionaires per capita than any other city in the country. Although they had only a minor stake in the wheat export trade, her merchants and shipmasters developed the salmon fishery of Alaska, the lumber industry of the Northwest, the sugar trade of Hawaii, the cod fishery of Okhotsk Sea, and packet lines to Tahiti. Little of this finds its way into the book.

The concluding chapters bring the history up to date with a brief sketch of the influence of World War I and a full and essentially fair account of Harry Bridges and the great strikes of 1934 and 1936-1937. The illustrations are well chosen and there are four pages of bibliography, although the contributions to the text of several sources not mentioned can be easily recognized. A few misprints, such as '*Antelope*' for '*Antiope*' on p. 239 and '*big Timandra*' for '*brig Timandra*' mar an otherwise excellently printed text.

JOHN LYMAN

Dahlgren, Virginia

JOSEPH DUDLEY TONKIN, *The Last Raft* (Harrisburg, Penna.: The Telegraph Press, 1940). 5″ x 8″, cloth. 146 pages, 15 illustrations. $1.50.

An adequate supply of timber was never a problem of pressing importance during the period of wooden shipbuilding in the United States. But as the stands near the centers of the industry were depleted, transporting the great quantities of pine and oak, particularly the huge pieces used for keels, clamps, and spars, from the hinterland areas to the coast gave rise to a new phase of inland marine activity – rafting.

This little book, written by a descendant of one of the most prominent characters in the trade describes the phase in detail. An introductory chapter gives the historical background of that area in Pennsylvania which was the seat of the industry. Then the rise and fall of the lumbering and rafting business are treated. At first it was on a selective basis; that is, individual trees were chosen for felling rather than the wholesale cutting of a tract. Once on the ground, broadaxemen rough squared

the trees and dragged them by horse teams to the river banks. Early in the spring the timbers were formed into rafts. Their design and construction were carefully thought out so as to enable the rafts to navigate falls, stony rapids, and short turns. To be sure the streams contained sufficient water to float the craft to the lower reaches of the rivers, the raftsmen not only took advantage of spring freshets, but they also created artificial high waters, called 'splashes,' by opening a series of dams along the head waters and feeder streams. In this way many of the spars used on the great sailing vessels of the 1850-1880 period were brought to the sparyards of Baltimore, Philadelphia, New York and Boston. Rafts made up entirely of 90-foot sticks were common and spars of 110 feet in length were brought out occasionally. In a similar manner white oak and other woods were carried to market from the central Pennsylvania mountains. During the middle nineteenth century as many as 2,600 rafts were locked through the Chesapeake and Delaware Canal in one year, all of them bound for the Philadelphia shipyards alone; how many actually passed down the Susquehanna River it appears impossible to estimate. Yet so quickly did the demand for big timber pass with the triumph of metal over wood, by 1897 the last commercial raft had made its voyage down-stream, thereby bringing the industry to an end. The book does not take its title from this raft however, but from the story of the attempts of Vincent Tonkin and his descendants to revive the memory of the whole rafting trade. In 1912 and again in 1938 with the help of the few surviving old-time raftsmen they constructed rafts and made the trip down-river. Their adventures and misadventures on these voyages are described in the final chapter.

The book is well designed, printed, and bound. It is illustrated not only with photographs of rafts and reproductions of timber brands and documents on the trade, but also with technical drawings detailing the construction of a typical raft. While it describes a very minor phase of American maritime activity, the book is interesting and a competent piece of work.

M. V. Brewington

Devon, Pennsylvania

Samuel Chamberlain, *Martha's Vineyard: A Camera Impression* (New York: Hastings House, 1941). 6″ x 7″, boards. 73 pages, about 100 illustrations. $1.25.

Writers' Program Work Projects Administration, *A Guide to Key West* (New York: Hastings House, 1941). 5″ x 8″, cloth. 122 pages, 49 illustrations, end-paper maps. $1.25.

From the opposite ends of the Atlantic Coast come these two little books describing islands which have much in common with each other. Both are resorts, the one summer, the other winter; both originally were largely dependent on the sea for their livelihod. If one forgets the tourist trade, both still are to a great degree. Relying primarily on a pictorial presentation both islands are shown to the best advantage in architectural, sea and landscape photographs of these things the visitor seeks. No attempt is made to show the perhaps more interesting 'off-season' side of life that begins when the tourist has packed his bags and departed. Text and caption help in telling the story of the islands' past and present against a background of whaling, cod, and lobster fishing at the Vineyard and sponging, wrecking and sport

fishing at the Key. The maritime student will wish for more of this and less of artistically posed trees and doorways. Neither book has caught many of the local types of watercraft such as the Noman's Land Boats or the sponge sloops. One Vineyard cat is depicted and made to work overtime. Even the ubiquitous lobsterman and red snapper fisher are portrayed only at the docks thereby losing an essential element in the lives of both islands. In *Martha's Vineyard* one curious error appears: on page 55 the reader is informed that Captain George Claghorn, an island-born man designed the frigate *Constitution*! Despite the obvious Chamber-of-Commerce purpose the photographs in Key West seem superior to those in *Martha's Vineyard* and the impression one gains from both the illustrations and the text of the former is far more accurate.

M. V. Brewington

Devon, Pennsylvania

Elizabeth Ring, Louis T. Ibbotson, Rising Lake Morrow (Eds.), *A Reference List of Manuscripts Relating to the History of Maine* (Orono: University of Maine, 1938, 1939, 1941). 3 volumes, 6" x 9", paper. I, xx + 427 pages; II, xxxv + 261 pages; III, xvi + 211 pages. University of Maine Studies, Second Series, No. 45. $4.25.

Occasionally one of our government's alphabetical agencies supports or produces a work that is of real value. With the publication of the Index as Part III of this book another useful project, made possible by Works Progress Administration funds and sponsored by the University of Maine, was brought to a successful close. This book is one of the first attempts of its kind to publish a record of the locations of manuscripts of historical importance in private hands for a single state. The mere physical labor involved in listing over two hundred thousand manuscripts, scattered over a wide geographical area, is no trifling accomplishment and Miss Elizabeth Ring, the director of the project, is to be congratulated on the successful completion and publication of a truly heroic work.

In the introduction to Part I the purpose, scope and arrangement of the material is defined. Archive material, except where it appeared in private collections, is excluded. We are told that 'In general, lists were garnered from the collections of both defunct and active historical, town, city, and academic libraries, and small collections in private and semi-private hands. Except for some work in the libraries of Boston and New York, the search was confined to the State.' Supplementary information not included in these volumes is on file at the University of Maine.

The arrangement of material in Part I is first by counties and then alphabetically by general subjects. Although the maritime historian will find a quantity of interesting subject-matter scattered throughout this volume, it is Part II that will particularly attract his attention. In this second volume large collections of manuscripts relating to single subjects are listed under selected subject headings. Under 'Shipping' there are one hundred and fourteen lots of papers listed on pages 109-140. Twenty-five of the items contain material referring to eighteenth-century shipping activities and naval papers appear in five of the lots. Part II is also distinguished by having a twenty-seven page article on *Maine Maps of Historical Interest* by Mrs. Fannie Hardy Eckstorm. Part III is a detailed and well-arranged index

to which is appended a check list, consisting of four and one half pages in double columns, of the names of vessels mentioned in the first two volumes.

The nature of the maritime papers listed can be gathered from the following small sample selected at random: a record of ships entering the port of Bangor from 1847 to 1850 (the date of entry, nationality, registration, cargo, consignee, tonnage, number of crew and master's name are given in each case); two hundred separate papers concerning the bills of entry, discharge papers, logs, and fitting out of the bark *Antioch* for 1858-1859; a log of the privateer brig *Grand Turk* of Salem, containing descriptions of the captures of the ships *Paragon, William* and *Apollo,* and the schooner *Brittanica;* a miscellaneous collection of documents relating to Brunswick vessels and sea-captains, 1781-1878; seventeen log books and letters of Captain Samuel Patterson of Augusta about ships he commanded from 1794-1816; a letter book containing some shipping matters and accounts of Samuel Pote of Marblehead, 1752-1755; papers relating to the frigates *Constitution, Essex* and *Philadelphia* formerly belonging to Commander Edward Preble of Portland; miscellaneous shipping papers of Captain Alexander Raitt of Kittery, 1775-1790; large collection of miscellaneous manuscripts in five hundred letter files, thirty sea chests and numerous account books, logs, etc., all referring to the business of the famous Sewall shipping family of Bath; two journals kept on board the frigate *President* and one kept on the frigate *Chesapeake* by Alexander Scammel Wadsworth of Portland.

The book should well repay the amount of labor invested in it and prove an invaluable aid in finding source material to students of New England history.

ERNEST S. DODGE

Peabody Museum of Salem

LUCILE SELK EDGERTON, *Pillars of Gold* (New York: Alfred A. Knopf, 1941). 5¾" x 8", cloth. 403 pages, map. $2.50.

This novel is a story of the gold rush along the Colorado during the early 1860's, when the Territory of Arizona was difficult of access and transportation a major problem and when the California Volunteers were defending that country from the Confederates and hostile Indians. It is the struggle for the control of the navigation of the Colorado River that is one of the main themes of *Pillars of Gold.* The material is new and excellent for fictional treatment, and Mrs. Edgerton has written an interesting book, which, however, might have been better as a novel had the fiction and history been skilfully fused. But the author has done careful research and has presented a vivid picture of life in the Colorado country in and around La Paz and a reasonably accurate account of the navigation of the river in the years 1862-1864.

The main departure from history is in the omission of the achievements and the exaggeration of the faults of the Colorado Steam Navigation Company, which becomes in the novel the monopolistic company controlled by the villain. The Colorado Steam Navigation Company was a monopoly, was probably in some way connected with the steamboat monopoly of California, and undoubtedly expressed some active hostility toward the new opposition line. As the author states, the rec-

ords are meager. But it was not merely the selfish interests of the monopoly that kept it from giving the miners adequate service; the company was caught unprepared by the sudden rush of business caused by the mining boom and the growth of new towns along the river. During previous years its boats had lain idle for about eight months out of the year, since practically its only customer had been the United States Army, which had troops stationed at Fort Yuma and Fort Mohave. The company did make an effort to increase its facilities in 1863-1864; in December 1863 a 200-ton burden freight barge was shipped down to the river to be towed by one of its boats, and by 1864 it had three boats operating, one of them the new *Mohave* (I), capable of carrying 100 tons of freight. In the novel the monopoly has only two boats and no barges. Mrs. Edgerton describes well, however, the difficulties of steamboating on the Colorado and the activities of the opposition miners' line, which cannot receive too much credit for its daring in steaming its steamboat around to the Colorado from San Francisco and navigating the strange river clear to Callville in an attempt to establish a new trade route to Salt Lake City.

HAZEL EMERY MILLS

Eugene, Oregon

HELEN HALSEY, ed., *Incident on the bark* Columbia, *being Letters Received & Sent by Capain McCorkle and the Crew of his Whaler, 1860-1862* (Cummington, Massachusetts: The Cummington Press, 1941). 5″ x 6½″, cloth. 64 pages, unnumbered. $3.00.

GARRETT W. LOW, *Gold Rush by Sea* (Philadelphia: University of Pennsylvania Press, 1941). 5½″ x 8″, cloth. 187 pages, 2 illustrations. $2.00.

The letters exchanged between Captain Samuel McCorkle, First Mate Joseph C. McCorkle and Charles Fowler of the whaling bark *Columbia* and their friend and neighbor, Charles Henry Halsey of Southampton, Long Island, are good documents and good reading. They are no more spectacular than their writers, but they show American seamen of the sixties under normal conditions, and for that very reason they are more significant than many of the more dramatic accounts of whaling voyages. The publisher's prospectus states: 'These whaling letters, found recently in a Southampton attic, are the material of Whitman and Melville stripped of idealism. Naked of a poet's dream, the life looks more like Mark Twain or Artemus Ward. The correspondents, common men concerned with the business at hand, speak with eloquence for themselves. Their America extended from town meeting to whaling grounds off the Falklands, and they lived it for all it was worth. Their spelling reflects their directness of mind; to them war means simply more taxes, and a voyage the absence of women. Their concerns are elemental: business, death, and marriage.' Ordinarily the reviewer and reader must take the publisher's account of a book with some reservations, but in this case the Cummington Press has described its product with honesty and insight. The letters are exactly that, no more and no less, and the Press has presented them agreeably in hand-set type on good paper. Miss Halsey has confined her editing to punctuation and a brief introduction, and has wisely let the spelling alone.

Garrett Low's journal of his voyage to California in the ships *Washington Irving* and *John Bertram,* 1850-1851, is livelier but less honest reading. He describes his fellow passengers with snap, and as the voyage proceeds plenty of drama develops. The master wishes to seduce a pretty eighteen-year-old passenger, Fay Barkley, and, to achieve that end, removes an essential part from the distilling apparatus and lets the passengers know that they will have no drinking water until he has had Miss Barkley. After a week of this (during which nothing is said about the crew's water supply) the passengers, including a worthy clergyman, are begging Fay to sacrifice herself for the common good, and the situation is only saved by Fay's sister, Lilly, disappearing into the master's cabin and remaining for three days and nights! Two months later another passenger, Professor Dodd, locks the master in his cabin, steals one of the ship's boats and rows ashore in search of buried treasure! The journal is certainly entertaining, but as it progresses the stories become taller and taller, and the reader begins to wonder who is crazy. As it is clear that the publishers have acted in good faith in presenting an authentic journal, one can only conclude that Garrett Low was a young man with a highly charged imagination who amused himself during a tedious voyage by improving dull facts into good yarns. As the editor (who is Low's grandson) states that assumed names were used for the vessels and passengers 'to shield some of the persons involved' this conclusion is strengthened. Garrett Low is an entertaining young man, and *Gold Rush by Sea* is worth an evening, but I cannot stretch my credulity to believe that such a series of incidents occurred except in his imagination.

WALTER MUIR WHITEHILL

Peabody Museum of Salem

EDWIN H. BRYAN, JR., *American Polynesia: Coral Islands of the Central Pacific* (Honolulu: Tongg Publishing Company, 1941). 6″ x 8¾″, paper or cloth. 208 pages, 18 plates, 46 sketch maps. Paper, $1.00. Cloth, $1.50.

This book consists of forty-five short chapters of which thirty-five are devoted to thorough descriptions of individual coral islands in the Central Pacific. Although most of these islands are now under British control, the United States' claim to them was so generally accepted in 1859 that the German geographer Behm called the area 'American Polynesia.' The first ten chapters are devoted to general descriptions of the Central Pacific basin, the formation of coral islands, climate, plant and animal life, the period of discovery, the guano trade, and the recent development of airports. The reviewer must confess that he picked up this book with the suspicion that a work aimed at a passing popular interest always arouses. The suspicion, however, was not wholly justified. The author, who is Curator of Collections at the Bernice P. Bishop Museum, has visited twenty of the thirty-five islands described and Bishop Museum expeditions have visited many of the others. It is a pity that there are no footnotes of definite references in the text to the extensive bibliography. An adequate index brings the book to a close.

ERNEST S. DODGE

Peabody Museum of Salem

COLIN MAYERS, *Submarines, Admirals and Navies* (Los Angeles: Associated Publications, 1940). 5¾" x 8⅞", cloth. 280 pages, illustrations. $3.00.

Submarine warfare is a lively topic at the present time, and from his experience as senior instructional officer of the British Submarine School the author suggests some possible courses of future development in this art. Giant submarine motherships, small submarines attacking capital ships from beneath with paravane-mines, aircraft-carrying submarines, smoke-laying submarines, submarines with greater submerged than surface speeds, and big-gun submarines engaging in artillery duels with battleships are all visualized.

It may be that Commander Mayers is a little one-sided in his view-point. Supersonic detectors he regards as no serious obstacle to the successful attack of submarines, and never for an instant are torpedo aircraft or surface speedboats considered as alternative weapons or the relative advantages of the three types weighed. The V-class submarines of the United States Navy are condemned as slavish copies of German models which failed in the last war.

Apart from his submarine experience, there is much to be learned from Commander Mayers' encounters with admirals and navies. The author is the first to admit that the path of the innovator in military establishments is a thorny one unless originality is combined with tact and diplomacy. The events which led to his being passed over for promotion, his resignation from the Royal Navy, and his subsequent tribulations contain a lesson worth studying by the young officer.

When the complete history of sea warfare in the present conflict is written, more light can be thrown on the correctness of Commander Mayers' theories. Whatever the result, this book will be a first-hand source for the history of submarine navigation.

CHARLES LANE POOR, *Men Against the Rule,* Foreword by George A. Cormack (New York: The Derrydale Press, Inc., 1937). 20 illustrations. Limited edition, 950 copies. $10.00.

This book is dedicated to the Flag officers and members of the New York Yacht Club, and is a description of the rating, or measurement rules, and time allowance formulas, which have been formulated and used by this Club from the time of its formation in 1844 up to the present day. The author, who joined the New York Yacht Club in 1896, is an authority on rating rules and has performed great services to the Club as a member of Rules Committees. Every change in the rules is given in chronological order, with explanatory notes and comments.

During the early history of the Club, the rating formulas were extremely simple, and if the designers had bothered to take advantage of the loopholes, the most horrible freaks would have resulted. Luckily, the designers did not pay very much attention to the rules, but rather tried to produce fast able boats, regardless of what the rating might be.

Present day yachtsmen will be surprised to note that the time allowance rules in those days were the cause of more grief and arguments than the rating rules, and they were frequently changed until 1908 when the present time allowance tables were adopted. At the same time, a rating formula was adopted which formed the

basis for the so-called 'Universal Rule.' Additional limitations have since been added, but the original formula has remained unchanged to the present day. It is indeed unfortunate that, after all the work that has been done to make an almost perfect rule, during the last ten years only two boats, the J Class boats *Rainbow* and *Ranger* have been built under it, and its revival seems very doubtful. A number of pictures illustrate the types of yachts produced under the various rules.

The average yachtsman will find this part of the book rather dry and hard to digest, but to members of rules committees and others who are interested in rule making, this chapter will be both educational and useful as a source for reference.

In the second chapter, the races for the 'Americas Cup' are reviewed from a new and interesting angle. It shows how the rating rules have affected the shape and size of the yachts, which have competed for this famous trophy. Drawings of modern 'Cup' yachts, superimposed over those of earlier contenders, clearly indicate differences in hull and sail plans between yachts of various periods.

The last chapter deals with the speed of racing yachts and systems for working out time allowance tables. A great number of races between 'Cup' yachts and other well-known classes provide figures on speed which substantiate the accuracy of the present time allowance tables.

Great credit is due Dr. Poor for his ability to reduce a most intricate subject to simple terms.

C. A. ALBERG

Boston, Massachusetts

JOHN W. WRAY, *South Sea Vagabonds* (New York: D. Appleton-Century Company, 1941). 5½" x 8", cloth. 305 pages, illustrations. $2.50.

'This book is written . . . for the man who works in the city office and dreams about sparkling blue waters and cocoanut palms and white sails bellying to the warm trade winds. It will, perhaps, show him how it is possible to break away from the ties of civilization, build himself a boat and sail in her wherever he will,' so states the preface, written aboard the yacht *Ngataki* at Vavau, Friendly Isles. The author, a young New Zealander, is well qualified to write such a preface. An office man himself until the depression of the early thirties landed him on the beach with a total capital of fifty dollars and a most remarkable motor bike, he decided to build a boat and go cruising. It is hard to say which is the more interesting, the story of the creation of the 35-foot cutter *Ngataki* (pronounced Nar-tarkey and Maori for 'abode of the elite'), or the subsequent ocean cruising, the Trans-Tasman Race, solo cruising and beachcombing. Yachtsmen, dreamers, sportsmen and sailors will enjoy this pleasing and informative book.

FLORENCE BENNETT ANDERSON, *A Grandfather for Benjamin Franklin; The True Story of a Nantucket Pioneer and His Mates* (Boston: Meador Publishing Company, 1940). 5¼" x 8", cloth. 462 pages, illustrations. $2.00.

Peter Folger, the maternal grandfather of Benjamin Franklin, serves as the central figure for this history of seventeenth-century Nantucket and the adjacent

mainland. An attempt has been made to correlate anecdotal with documentary source materials and although the result might be criticized on these grounds, the book is readable and interesting. There is a bibliography of printed and manuscript sources; maps and numerous illustrations have been included. It is required reading for all interested in Nantucket.

ALEC HUDSON, *Enemy Sighted* (New York: The Macmillan Company, 1941). 5″ x 7″, cloth. 61 pages. $1.25.

What would happen if a light cruiser were to engage a pocket battleship? There could be little question, but if the cruiser unknown to her antagonist had a submarine in consort, that would be another story, and indeed it is. Told by a naval officer of wide experience, this fictional exposition of an hypothetical problem laid in the Indian Ocean has all of the gripping realism of an eye witness account. Once begun, it will be impossible to lay aside until finished.

The Forbes Collection of Whaling Prints at the Francis Russell Hart Nautical Museum (Cambridge: Massachusetts Institute of Technology, 1941). 6″ x 9″, pamphlet, 14 pages, 2 illustrations.

Announcement of the acquisition of the Allan Forbes collection of whaling prints, including a brief comment on the collection as a whole, notes on 'The Benjamin Russells' by Arthur C. Watson and a list of thirty Russell water colors and lithographs represented in the collection. There are two illustrations, one of the bark *Andrew Hicks* at sea, and a portrait of Benjamin Russell from a daguerreotype.

Ship Registers and Enrollments of Newport, Rhode Island, Volume I, 1790-1939 (Providence, Rhode Island: Survey of Federal Archives, 1941). 8½″ x 11″, paper. vii + 810 pages. Available from the Survey of Federal Archives, Works Projects Administration, Providence, R. I.

The most recent of the series of extremely valuable compilations of maritime data dealing with records of vessels registered, enrolled and licensed in the Newport customs district. A subsequent volume will contain the record of vessels licensed on enrollments out of the port and vessels under 20 tons. In common with its predecessors it has been reproduced in mimeographed form and bound in paper covers.

JOSEPH B. EGAN and ARTHUR W. DESMOND (Eds.), *The Civil War: Its Photographic History* (Wellesley Hills, Massachusetts: Character Building Publications, 1941). 2 volumes. 8″ x 10½″, cloth, illustrations. Vol. 1, 160 pages, Vol. 2, 161-312 pages.

A photographic history from contemporary photographs made by Matthew B. Brady and others with a minimum of text and one or more illustrations on every page. Volume 1 deals with the War in the East, volume 2 with the War in the West and South and on the water. The book is intended for the use of secondary school students but the illustrations which have been specially prepared will be of more general interest. There are numerous views of warships, artillery and munitions of war, and scenes of maritime significance.

PAUL H. BLAISDELL, *The New S. S.* Mount Washington II . . . *for Lake Winnipesaukee, 1872, 1888, 1940* (Concord, N. H.: Concord Press, 1940). 6" x 9", paper covers. 20 pages unnumbered, 10 illustrations, map.

Illustrated pamphlet covering cutting up into sections the 1888 Lake Champlain steamboat *Chateaugay* and transportation to and reassembly on Winnipesaukee to replace famous side-wheeler *Mount Washington* destroyed by fire in 1939.

COL. PHILIPPE BUNAU-VARILLA, *From Panama to Verdun: My Fight for France* (Philadelphia: Dorrance & Co. 1940). 5" x 7½", cloth. 277 pages, 8 illustrations, indexed. $2.50.

Autobiography of one of the world's most celebrated engineers who was largely responsible for the completion of the Panama Canal. Some Americans will be surprised to learn that France had completed the greater part of the Isthmian Canal before Colonel Bunau-Varilla succeeded in persuading the Roosevelt administration to take over. The French Company failed due to rotten internal politics in France and not because of lack of skill in her engineers.

GENE FOWLER, *The* Jervis Bay *Goes Down* (New York: Random House, 1941). 5½" x 8", cloth. 24 pages. 50¢.

Narrative poem commemorating the gallant defense of its convoy against German raiders of the 14,164-ton armed merchantman *Jervis Bay,* Captain H. S. F. Feegan. Reprints in appendix contemporary newspaper account by Tania Long dated London, 12 November 1940. Due to holding off the raider until silenced the *Jervis Bay* enabled twenty-nine of the thirty-eight merchantmen in its convoy to escape. One of these was the tanker *San Demetrio,* afire and abandoned by her crew only to be boarded again three days later by the second mate's boat, have the fire extinguished, and brought to Ireland by overcoming incredible odds. Full account of proceedings on this episode are given in 12 March 1941 issue of *Lloyd's Law Reports.*

CHARLES L. G. ANDERSON, *Life and Letters of Vasco Nunez de Balboa* (New York: Fleming H. Revell Company, 1941). 5½" x 8½", cloth. 368 pages, illustrations. $3.50.

A new life of Balboa popularly written, including 'a history of the first years of the introduction of Christian civilization on the continent of America,' and bearing the subtitle 'including The Conquest and Settlement of Darien and Panama, the Odyssey of the Discovery of the South Sea, A Description of the Splendid Armada to Castillo del Oro, and The Execution of the Adelantado at Acla.'

JOHN DOZIER GORDAN, *Joseph Conrad: The Making of a Novelist* (Cambridge: Harvard University Press, 1940). xiv + 430 pages, portrait. $4.00.

A purely literary study of the great maritime novelist with an extensive bibliography of manuscript and printed sources, exhaustive annotations and an index. For those who love the sea and books this study of Conrad at work will be a delight.

Marestier's *Mémoire sur Les Bateaux à Vapeur des États-Unis d'Amérique*

THE best source for information on the early days of steam navigation in the United States is an official report written by a French naval engineer, Jean Baptiste Marestier, who visited England and the eastern seaboard of the United States during the years 1819-1820. Because of its scientific character the report was submitted to and commented upon by members of the Institut de France, Académie Royale des Sciences and, because of the great interest in steam propulsion it was published by order of the Ministre de la Marine et Des Colonies (Paris, 1824). Complete copies are to be found at the New York Public Library, the libraries of the University of Virginia, Johns Hopkins University, the Franklin and Peabody Institutes, and the Carnegie Library, Pittsburgh. The Mariners' Museum has the text and the John Carter Brown Library has the plates. It has not been translated into English.

The investigation, from which the *Mémoire* grew, was ordered by Pierre J. N. Rolland, Inspector General of Maritime Science, as a means of determining the real progress of steam navigation in England and in America. Newspapers had been publishing exaggerated accounts brought by travelers. Also, Charles Dupin, a marine engineer and a close friend of Marestier, had caused a disturbance in French naval circles by publishing accounts of England's maritime progress as he had observed it during several visits to that country.[1] Marestier was instructed to concern himself primarily with developments in the United States.

The *Mémoire* or Report was submitted in two parts, the first having to do with the commercial and the second with the military marine. Only the first part was published. It contains the following: a brief Preface; comments on the *Mémoire* by a committee of the Royal Academy (pp. 1-30); the Report proper which includes a history of the development of steam navigation with emphasis on America's physical advantages and comparative data respecting designs and dimensions of steamboats, engines and boilers (pp. 41-134); Notes which include more details respecting steamboats of particular interest, calculations of distances, list of English steamboats with brief comment, description of ferryboat landing-gear, Fulton's and Marestier's own calculations of engine specifications for given speeds, discussion of high pressure engines, and description of experiments in propulsion by means other than the paddle-wheel (pp. 135-240); finally, an Appendix which describes things not directly concerned with steam navigation such as fast sailing vessels, dredging machines, machines for making pulleys, ropes, cut-nails, etc. (pp.241-280). In addition there was published, under separate cover, drawings of vessels, engines, machines, tools, etc., mentioned in the text.

The unprinted second part could not have been very voluminous because the only American steam warship then existing was the *Demologus* or *Fulton the First*

[1] C. Dupin, *Mémoires sur la Marine et les Ponts et Chaussées de France et d'Angleterre* (Paris, 1818) and *Voyages dans la Grande-Bretagne, entrepris relativement aux services publics de las Guerre, de la Marine, et des Ponts et Chaussées, en 1816, 1817, 1818, 1819, et 1820* (Paris, 1820-1821).

built in 1814 for the defense of New York harbor. In any case, there was another investigation from the military and navigational point of view by Captain Montgéry who was instructed to sail his frigate to American ports for that purpose. Mont-

MÉMOIRE

SUR

Les Bateaux a Vapeur

des Etats-Unis

d'Amérique,

AVEC UN APPENDICE SUR DIVERSES MACHINES RELATIVES A LA MARINE.

Par M. Marestier,

Ingénieur de la Marine royale, Chevalier de la Légion d'honneur.

PRÉCÉDÉ DU RAPPORT FAIT A L'INSTITUT SUR CE MÉMOIRE,
PAR MM. SANÉ, BIOT, POISSON ET C. DUPIN.

Imprimé
Par ordre de Son Excellence
Le Ministre de la Marine et des Colonies

PLANCHES.

A PARIS,
DE L'IMPRIMERIE ROYALE.
1824.

géry's report was not published but he wrote a life of Fulton containing a description of the *Demologus* which was published in pamphlet form.[2] A copy in the possession of the New York Public Library has inscribed on its cover the words 'A mon ami Marestier, M. de Montgéry.'

[2] M. de Montgéry, *Notice sur la Vie et les Travaux de Robert Fulton* (Paris, 1825).

Marestier graduated from the Ecole polytechnique with such a brilliant record that he was placed in the Marine Engineer Corps. He served at Genoa and Livorno until the reversal of French fortunes in 1814 caused him to be sent to Toulon. There he met and shared quarters with Charles Dupin whose reports on England were to point the way for his own report on America. It was Dupin who, as Secretary, wrote the comments of the committee of the Academy which examined Marestier's *Mémoire*. Marestier had just finished reorganizing the naval construction service at Bayonne when his superiors, recognizing his ability, energy, and sagacity, sent him on the mission to America. Before returning to France Marestier examined steamboats in New York, Philadelphia, Baltimore, and Washington. He also traveled on some of them on the waters of the Hudson, Delaware, and Chesapeake. He found that speeds were often exaggerated due to miscalculations as to distances covered and to disregard of the effect of tide and river currents. He nevertheless found much of interest and of value to report to his countrymen.

Marestier's description and drawings of the *Savannah* are of especial interest to Americans. These show that she had small collapsible paddle-wheels making her look quite unlike the familiar lithograph which shows her with large covered wheels.[3] She interested Marestier because of her unique wheels and, of course, because she had just returned from her transatlantic voyage. Her engine was also unique but weak as compared with others then in use.[4]

The most impressive steamboat at New York in 1820 was the *Chancellor Livingston* whose 400 tons (dimensions in metres: 47.55 x 10.06 x 1.83) overshadowed the 319-ton *Savannah* (dimensions in metres: 30.48 x 7.92 x 4.27). The *Chancellor Livingston*, a Hudson River boat averaging twenty-one hours to Albany, is described in detail in the *Mémoire*. Marestier notes that she carried a crew of fourteen (including cooks, stewards, etc.); that the women's cabin was on deck but that the women went below to the men's cabin for meals; and that when the double-decked berths became filled surplus passengers slept on divans, tables, or on the floor. The food was not to a Frenchman's liking, it lacked *de sauces recherchées*.[5]

The 'Notes' include some more details of steamboats of historic interest. Among the experiments in new ways of using steam power Marestier mentions a twin screw arrangement, which appears to have been that on the *Little Juliana* built by John and Robert Stevens in 1804.[6] He also describes a kind of steam turbine (*à rotation immediate*) being tried out on the *Surprise* built by George Stiles, one-time mayor of Baltimore.[7] The lightness, compactness and economy of fuel consumption of that

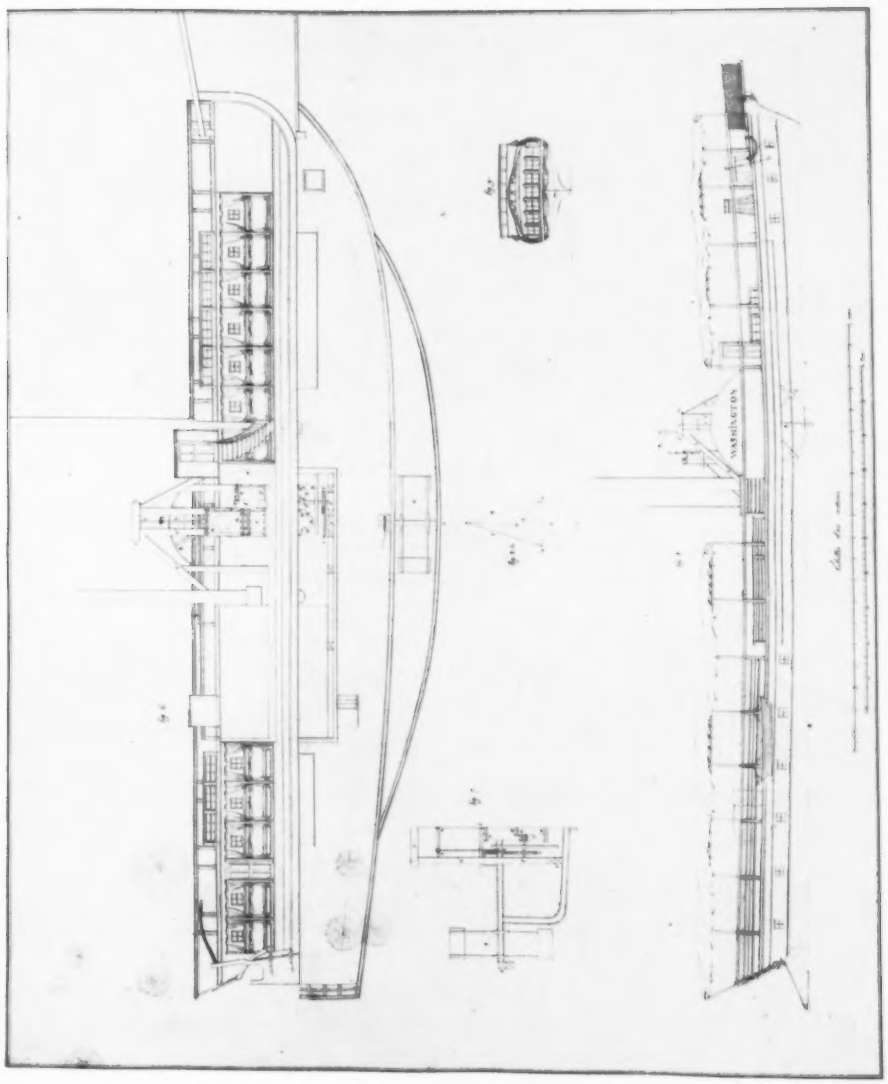
[3] *Mémoire*, Plate VII (Figs. 32-34), shows the *Savannah's* paddle-wheels and inclined cylinder with pump. (Plate 16.)

[4] When Professor Renwick, an outstanding American engineer, wrote to an English correspondent, Captain Edward Sabine, regarding the progress of steamboat construction in America (about 1828) he mentioned the excellent castings, cylinder-borings and general fittings of Robert Stevens's new steamboat *North America* and added, 'I mention this, because the only specimen of an American steamboat that has yet reached Europe, was most deficient in all those particulars. That vessel was, however, in every respect, far behind the better class of our steamboats, even at that distant period, and vastly inferior to those which are now constructed.' Quoted from *An Account of some of the Steam-Boats navigating the Hudson River in the State of New York*, p. 8. For a good explanation of some of the *Savannah's* defects see S. C. Gilfillan, *Inventing the Ship* (Chicago, 1935), p. 117.

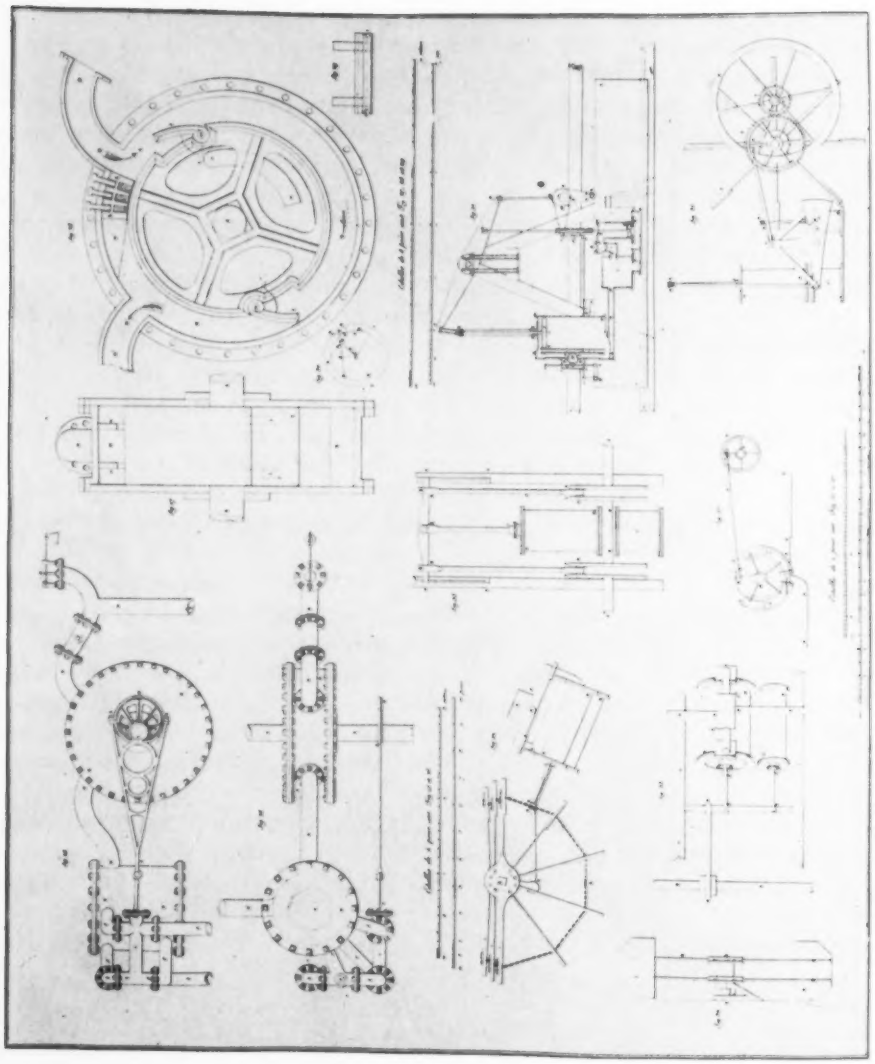
[5] *Mémoire*, Plate I (Fig. 1) and pp. 67, 82-93 and figs. 18-19, 41-43.

[6] Illustrated in A. D. Turnbull, *John Stevens, an American Record* (New York, 1928), p. 337. *Mémoire*, fig. 60.

[7] *Mémoire*, Plate VII, figs. 25-29 (Plate 16). There is an account of this 'Rotary Steam Engine' in *Niles Weekly Register*, XVII (1819), p. 97.



Marestier, *Mémoire sur les Bateaux à Vapeur des États-Unis d'Amérique*, Plate II



Marestier, *Mémoire sur les Bateaux à Vapeur des États-Unis d'Amérique*, Plate VII

engine appealed to the French engineer as did, for the same reasons, the high pressure engines built by Oliver Evans. Whereas practically all American engine builders followed Watts's lead in using pressure of only 2/3 atmosphere Evans used pressure at 10 atmospheres in boilers tested to 100 atmospheres. Marestier saw his engines at work on the steamboats *Etna*[8] and *Pennsylvania* running between Philadelphia and Bordentown. He considered them safe if equipped with safety-valves and if operated by intelligent engineers. Fuel economy was important not only for reducing expenses but also as a means of saving space, for a 60 h.p. steamboat consumed about two and a quarter cords of pine wood an hour. The wood cost about a dollar a cord.[9]

Marestier, engineer and mathmatician that he was, sought a formula to determine the kind of hull and engine needed to give a particular speed. His calculations are set down in the Notes. He saw that increase of power frequently failed to produce a proportionate increase in speed. He felt that Fulton's success was due to his having worked out a satisfactory formula. Marestier recognized, however, that with many variables to be accounted for and 'in the present state of the science' no final answer could be expected. His attempt to present one called forth the only measure of adverse criticism included in the comments of the committee of the Academy. They said:[10]

'When M. Marestier shall have eliminated some estimates and some technical details which were important to gather, but which would be useful only to engineers, we think that his work will be very worthy of printing and will render signal service to the new branch of maritime industry which, in our case, is still *peu avancée*.'

At the time of his death Marestier was working on a second edition of his *Mémoire*. It is likely that he planned to revise this part of his Notes.

Soon after his return Marestier was put to work constructing France's first naval steamboat for use in ports, as distinct from rivers. Although this vessel's performance did not quite come up to expectations his reputation as an authority on steam navigation was not affected. His services were sought after because of his sure and varied knowledge and his readiness for hard work. He was a member of a consultative Commission and of a Conseil des travaux de la marine. His only other published writing was a tract entitled, *Sur les explosions des machines à vapeur, et les précautions à prendre pour les prévenir*. This was intended to allay popular fears of boiler explosions. He was at Brest in 1832 when he died, following a brief illness, at the age of 52.[11]

[8] Marestier noted the report that the *Etna* had blown up in 1824 (*Mémoire*, p. 229) but indicated that it might have been another *Etna* since it happened in New York harbor. It was the same one, however, having been moved from the Delaware. It was said to have had a clogged pipe due to salt deposits. An account is given in *Report from Secretary of the Treasury on Steam Engines, House Report*, no. 21, 25 Congress, 3 Session, p. 424.

[9] Marestier reports pine wood cost from 3.75 to 4.50 francs, *Mémoire*, p. 71.

[10] *Mémoire*, p. 29.

[11] Michaud, *Biographe Universelle* XXVI, pp. 525-6.

Americans have only recently begun to realize the historical value of this Frenchman's work.[12] His report is a mine of accurate and detailed information regarding steamboats and the science of navigation in those early years of steam power. In the few years from Fulton's *Claremont* to Marestier's investigation (1807-1820) the number of steamboats on Long Island Sound had risen to about forty while the time of passage from New York to New London or to Albany had been reduced to an average of about twenty-one hours. Seaboard goods were beginning to go to Pittsburg via the Mississippi instead of by the old overland route. Marestier found that reputed speeds of 15 knots were in reality about 6½ knots but even that was doing pretty well.

Marestier's contemporaries appreciated him and his work. In the words of the Academy's committee:[13]

'It required a great deal of sagacity and talent for observation to gather these materials which are here presented with geometric conciseness. . . . By the importance of the subject, the able manner of its treatment, the difficulties in the way of observation, and the conclusions at which the author has arrived, this work appears to us to be worthy of occupying a very distinguished place in the esteem of people *de l'art et des savans*.'

We shall do well to place as high a value upon a piece of reporting which tells us so concisely so much about the early development of mechanical and maritime skills in this country. This work is a kind of etching in words which brings out in clear-cut, straight lines the restless energy, boldness, and cockiness which characterized that period of our history. Marestier's *Mémoire* is a landmark in the maritime history of America.

DAVID B. TYLER

[12] The section in the Appendix dealing with Baltimore clippers and pilot schooners has been translated and commented upon by H. I. Chapelle in *The Baltimore Clipper its Origin and Development* (Salem: Marine Research Society, 1930), pp. 111-134. This book also contains reproductions of Marestier's drawings of these vessels.

[13] *Mémoire*, pp. 28-29.

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Dates in parentheses after the names of vessels indicate either the year of the vessels building or of the reference. Dates indicating the year of the reference are printed in italic type.

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